The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 661.---Vol. XVIII. LONDON, SATURDAY, APRIL 22, 1848. [Price 6d.

TO IRONMASTERS.—TO BE SOLD, BY AUCTION, by Mr. NICHOLSON, at the ANGEL INN, CHESTERFIELD, on Monday, the 1st day of May next, at Three o'clock in the afternoon, for Four precisely, and subject to conditions, to be then produced, the unexpired TERM in a LEASE of COAL and IRONSTONE MINES, situated in the parish of SUTTON-CUM-DUCKMANTON and CHESTERFIELD, in the county of Derby. 1

To an approved purchaser, an extended lease would be granted of the several beds of coal and ironstone, which are well known as being of the best quality, and capable of being worked to the greatest advantage, at an unusually small cost.

The STEAM-ENGINES, MACHINERY, and other requisite APPARATUS for the carrying on of the extensive PLANT, known as the ADELPHI IRON-WORKS, situated three miles from the Chesterfield Station, on the Midland Railway, must be taken too, AT A VALUATION.

Further particulars may be had on application to Mr. Mills, land agent, Chesterfield; Mr. Richard Coke, Langton, near Alfreton; or to Messrs. Lucas and Cutts, solicitors, Chesterfield.—Chesterfield, April 17, 1848.

SILVER VALLEY, CALSTOCK.—SIMS'S COMBINED CYLINDER-ENGINE, WATER-WHEELS, MINE MATERIALS, &c.

GEORGE CARNE

Respectfully announces he is honoured with instructions from the directors of the SILVER VALLEY MINING COMPANY, TO SELL, BY PUBLIC AUCTION, without the least reserve, at the MINE, on Tuesday and Wednesday, the 2d and 3d of May, the valuable

STEAM-ENGINE, 2

WATER-WHEELS, PLANT, AND MATERIALS,

COMPRISING

120 Fathoms of 8, 9, 10, 12, and 13-inch pumps, with working barrels	150 Fathoms of ladders
Windbores	Sheaves, of various sizes
Matching-pieces	150 Fathoms of BB capstan chain
Clackdoor-pieces	200 Fathoms of whim-chain
Seatings and glands	Quantity of new and used rope
Plunger Poles Stocked	Bell and stand
80 Fathoms of 8 and 10-inch main-rod	Large parcel of board & timber footways
2 Excellent capstans	Casings and dividings of the shafts
2 Shears, with pulleys, complete	Cisterns
3 Horse-whims, with poppet-heads and pulleys	Several beams, scales, weights, and stands
2 Balance-bobs	Dressing-floors, buddles, frames, racking tables, sieves and hutches
1 Angle, or V-bob	100 Fathoms of launders
100 Fathoms of horizontal-rods, strapping-plates, pulleys, brasses, and stands	Several wood houses
Powerful wrench and beam	Knocker lines
	Shaft gig

COUNT-HOUSE FURNITURE, IMPLEMENTS AND FITTINGS OF ASSAY-OFFICE.

SMITHY—2 anvils, horse, vice, ring and kibble moulds, plates and taps, screw stock, 2 smiths' bellows, 45 and 36 inches, cranes, new iron, bolts and burrs, scrap-iron, excellent tools, &c.

CARPENTERS' SHOP—Quantity of barrels, 2 benches, cross-cut saw, saw-pit, plank, &c.

THEODOLITE DIAL and QUADRANT, set of mathematical instruments, &c.

TWO WATER-WHEELS, of 18 and 22-feet diameter, and 25-inch breast, with the 12 stamp-heads, axles, tappets, lifters, &c., attached; and the

COMBINED CYLINDER-ENGINE

(equal to 50-inch cylinder), on Sims's Principle, erected by Mr. William West, about two years since, and now in perfect working order, together with the boiler, about 10 tons, and the well and condensing work.

The mine is situate about two miles from Callington, seven from Tavistock, and three from the quays on the Tamar, where every facility is obtainable for shipping heavy weights. The mail road adjoins the mine.

G. C. respectfully calls the attention of mine agents to this very valuable machinery, which has been in use only about two years, and is, for all mine purposes, as good as new.—Catalogues will be ready for delivery on Thursday, the 27th inst. (on and after which day the whole will be on view), and may be obtained at the *West Briton* Office, Truro; Bedford Hotel, and Queen's Head, Tavistock; Webb's Hotel, and the Fountain Inn, Liskeard; at the company's offices, 44, Finsbury-square, London; of Mr. J. Peter, the parser, Callington; or of the auctioneer, at his offices, 20, George-street, Plymouth.

Refreshments at Eleven.—The sale will commence each day at noon precisely.

Dated, 20, George-street, Plymouth, April 12, 1848.

VALUABLE SEA-SALE COLLIERIES TO BE LET.—TO BE LET, and entered upon on the 1st of July next, the valuable current-working COLLIERIES of EVENWOOD and NORWOOD, in the county of Durham. 3

These collieries are situated upon the line of the Stockton and Darlington Railway, by which the coals are conveyed to the shipping ports of Stockton and Middlesborough; and also, by means of this, and the York and Newcastle, and Leeds and Thirsk Railways, the coals have access to the important land-sale trade of Northallerton, Thirsk, Ripon, York, the lead-mining districts, and other towns in Yorkshire, and for shipment on the Ouse; and, by means of the proposed Northern Counties Union Railway, with the important land-sale trade of the western parts of Yorkshire and Westmoreland.

The royalties are very extensive. Two seams of coal are in working—one upwards of 6 feet, and the other of 3 feet. The pits are at a moderate depth from the surface, and the coal is worked at an exceedingly cheap rate, and is much prized as a houschold coal, both for export and land-sale.

The entering tenant has the option of taking what stock he may require, at a valuation; and the amount of capital required to enter upon the collieries will be of very small amount.

For particulars apply to Thomas Wheldon, Esq., Barnard Castle; or to Nicholas Wood, Esq., Newcastle-upon-Tyne.—Newcastle, March 3, 1848.

EXTENSIVE IRON-WORKS.—FOR SALE, BY PRIVATE BARGAIN, the BLAIR IRON-WORKS, belonging to the Ayrshire Iron Company, situated in the parish of Dalry, and county of Ayr. 4

These works, which have been recently erected at an immense cost, consist of two blowing-engines, five blast-furnaces, workmen's houses, steam-engines for working the mineral, together with utensils at the pits, furnaces, &c., all in working order, and capable of producing upwards of 35,000 tons of pig-iron per annum.

One of the blowing engines, high-pressure, estimated at 90-horse power, was erected in 1841; the other, a condensing engine, was erected in 1847, and is estimated at 200-horse power, the latter being capable of blowing five furnaces, and both fitted up in the most substantial manner, and at present in the best working condition.

The furnaces have been erected with the greatest care, and are fitted with air-heating apparatus of the most approved construction. The make of each furnace has generally averaged upwards of 150 tons of iron per week, and some of them have produced 180.

There are, besides the manager's house and store buildings, 187 workmen's houses, in a habitable state, attached to the furnaces and pits, and there are 20 partly built, which could be finished at a small additional outlay. There are also a new foundry, wright shop, fire-brick work, smithy, &c.

The MINERAL FIELDS, consist of COAL, IRONSTONE, LIMESTONE, and FIRE-CLAY, held in lease, by the company, at moderate fixed rents and Royalties, all situated within easy distances of the furnaces, and for the most part have the advantage of railway communication.

The COAL-FIELDS consist of several hundred acres, of which only a small portion has been wrought. Several pits, fitted with good engines and machinery, are sunk to the coal, and partly in operation.

The IRONSTONE consists of the well-known black-band, yielding about 3000 tons of calcined stone per acre; and it has been estimated that there are 300 acres or thereby still to work—besides which, there is a large extent of clay-band ironstone, hitherto little wrought, but capable of yielding a large output. There are 15 pits, with excellent steam-engines—some of them in present operation, and others ready to resume working.

The LIMESTONE QUARRY is worked by open cast, and is connected with the works by railway.

The FIRECLAY is abundant, of excellent quality, and cheaply produced.

The Glasgow, Paisley, Kilmarnock, and Ayr Railway (extending to Carlisle), passes close to, and has connection with, the furnaces—by means of which, and others in connection with it, the produce can be conveyed to the city and port of Glasgow (22 miles off), and to the seaports on the Ayrshire coast, each within a few miles of the works.

There is a large stock of calcined ironstone, coal, and limestone on the ground, so that the works may be put into immediate operation, and, under judicious management, the manufacture of pig-iron may be carried on to the greatest advantage. The concern will be found to be well worth the attention of persons having the requisite capital, and affords an opportunity of entering into the business seldom to be met with.

MALLEABLE IRON-WORKS.—Considerable progress has been made in the erection of extensive malleable works, which, when completed, will be capable of turning out 300 tons of bar-iron weekly. The most of the necessary machinery has been prepared by the contractors; and a portion of the work could be brought into operation in a few months to produce the half of the above estimate. This work is nearly adjoining the Pig Iron-Works, and connected by railway, and will be sold either together therewith or separately.

Plans of the property and mineral workings lie for inspection at the Ayrshire Iron Co.'s office, 113, St. Vincent-street, Glasgow, where, on application to Mr. Brown, every necessary information will be afforded, and orders given for inspection of the works.

IMPORTANT TO RAILWAY AND STEAM NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS. 5

W. BROTHERTON AND CO.'S

PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS OF MACHINERY.

W. B. & CO. have the pleasure to state, that the above article is extensively used in her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and fine pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers.

Further particulars can be had, and testimonials seen, by application to the manufacturers, W. BROTHERTON & CO., Rubgerford-Wharf, Strand, London.

N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

IMPORTANT TO CAPITALISTS.—TO BE SOLD, an excellent SLATE and SLAB QUARRY—VARIEGATED MARBLE and HONE QUARRY—COPPER and LEAD MINES—all situated on the same property, within a short distance of the shipping harbour of Portmadoc, Carnarvonshire. 6

A GENERAL STATEMENT.

The above works are situated on a farm called Cwcsawr-uchaf, in the parish of Llanfrothen, in the county of Merioneth, about seven miles distant from the shipping harbour of Portmadoc, and about two and a half from the railway of the Festiniog Slate Quarries to the port. They are near the celebrated quarries of Festiniog which are well known throughout Europe; and it hath been ascertained, by competent judges, that this slate vein is a continuation of the very productive vein worked by the Welsh Slate Company at that place, of which Lord Palmerston and other noblemen are partners, which send about 500 tons per week of fine slate to the market. The vein is about 70 yards wide, and very advantageous for working, being situated on the brow of a hill, and the rubbish thrown down, where there is a depository of 200 or 300 yards deep for it, without causing any trespass. The quality is good, splits well, and is of a beautiful blue colour.—Slates of the largest size are made from it, and slabs also, of large dimensions. Thousands of fine slates, worked to sizes, and beautiful slabs, are now ready on the bank.

The proprietor has ascertained most positively that no other slate quarries in Wales can produce such beautiful specimens from so near the surface, and where so little money has been expended.

The MARBLE and HONE adjoins the slate quarry, and some splendid specimens of variegated marble and hone have been already made from it.

The COPPER and LEAD MINES are about a quarter of a mile from the slate quarry, and the metals are of superior quality, and likely to become very productive.

There is the greatest facility for carrying on operations at all the works, which may be done with little expense, as few or no machinery will be required. A sawing and planing engine may be worked by water, just below the quarry.

The PROPERTY on which the above are situated will BE SOLD WITH THE WORKS, if required, which consists of 800 acres of land (more or less); about 200 acres of which is good arable, meadow, and pasture land; and the other 600 adapted for sheep and young cattle; 1200 sheep are kept on it in summer.

Satisfactory reasons will be given why it is sold.

For further particulars, and to treat for the same, apply (postage paid) to Mr. Richard Jones, printer and auctioneer, Dolgelly, North Wales, where specimens of the slates, marble, hone, copper, and lead, may be seen.

TO BE SOLD, OR LET, a valuable COAL MINE, in the township of GREAT HARWOOD, in the county of Lancaster. The mine has been recently proved, and found to be 3 feet 2 inches in thickness, and of excellent quality; it is commonly called, or known, by the name of the UPPER MOUNTAIN MINE, and extends over about 1000 statute acres, which will be divided into suitable lots. 7

The property is situated between the towns of Blackburn and Clitheroe, and is intersected by a branch of the East Lancashire Railway.

A section of the borings may be seen, by applying to Mr. Boosie, Rufford-hall, Ormskirk; or to Mr. Whittle, coal viewer, Charnock Richard, Chorley—to either of whom proposals may be sent.

TO RAILWAY CONTRACTORS AND OTHERS.—TO BE DISPOSED OF, BY PRIVATE SALE, a LOCOMOTIVE ENGINE, with six 4-feet wheels, connected, cylinders outside, 14 inches diameter, and 2 feet stroke.—Also, a TENDER, with six wheels, and capable of holding 1200 gallons of water. Both the engine and tender are in good condition, having been in use not more than six months, and are well worth the attention of those to whom power is more an object than speed. 8

Further particulars may be learned, by applying to Mr. John Lancaster, Kirkless Hall Colliery, near Wigan, where the engine, &c., may be seen.

MINING PUMPS FOR SALE.—About SEVEN FATHOMS of 10-inch, nearly new, MINING PUMPS, prepared as a sinking set, with slide rods, pumps, spears, valves, buckets, &c., and TWO HEAVY SETS of PURCHASE BLOCKS and TACKLES, to take 14-inch rope. Also, about SIXTY FEET of WOOD and IRON DRAW-RODS, with bell-crank, pendulums, &c. The whole to be sold for less than value, having only been wrought a few weeks in sinking a shaft. The purchase blocks and tackles will be sold separate. 9

Apply to Messrs. Mandus and Powells, James-street Brewery, Dublin.

ANGLO-MEXICAN MINT OFFICE, 5, Broad-street-buildings, April 21, 1848.—Notice is hereby given, that the ANNUAL GENERAL MEETING of shareholders in this company will be HELD at the office, as above, on Tuesday, the 2d May next, when one director will be elected, in the place of J. D. Powles, Esq., who goes out by rotation, but is eligible for re-election, and will be proposed accordingly.—The chair to be taken at One o'clock precisely. 10

G. B. LONSDALE, Secretary.

BLAENAVON IRON AND COAL COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders of this company will be HELD at their offices, Pancras-lane, London, on Friday, the 28th of April next, at Two o'clock precisely, when the accounts and transactions of the past year will be laid before them. By order of the board, 11

Offices, 4, Pancras-lane, London, March 24, 1848. JAMES BOOTH, Sec.

IMPERIAL BRAZILIAN MINING ASSOCIATION, Winchester-house, Broad-street, London, April 20, 1848.—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the proprietors of shares in this association will be HELD at the London Tavern, Bishopsgate-street, on Friday, the 12th of May next.

Notice is hereby also given, that, at this meeting, the election will take place of three directors, in the room of Thomas Gibson, Esq., Sir Isaac Lyon Goldsmid, Bart., and John Wray, Esq., and of one auditor, in the room of Abraham John Valpy, Esq., who go out of office by rotation, but who, being re-eligible, offer themselves for re-election. 12

The chair will be taken at Two o'clock precisely.

GEORGE THOMAS, Acting Director.

N.B.—The auditors' statement may be seen at the office three days before the above meeting.

MEXICAN COMPANY.—The directors hereby give Notice, that the ANNUAL GENERAL MEETING of proprietors in this company will be HELD at the office of the company, on Thursday, the 4th of May next, at One o'clock precisely, in conformity with the Deed of Constitution of the Company. 13

32, Great Winchester-street, April 22, 1848. J. M. MAUDE, Secretary.

TRELEIGH CONSOLIDATED MINING COMPANY.—A DIVIDEND of FIVE SHILLINGS per share has been this day declared, PAYABLE on Monday, the 10th of April inst., and on every succeeding Monday, between the hours of Eleven and Three o'clock.—The coupons, with a list thereof, according to a form, which may be obtained at the office, must be left, for examination, two clear days previous to payment. WM. NICHOLSON, Secretary. 14

57, Old Broad-street, April 3, 1848.

WHEAL CURTIS COPPER MINING COMPANY.—Notice is hereby given, that the board of directors have this day made a CALL of TEN SHILLINGS per share on the shares in this company, PAYABLE on or before the 10th day of May next; and the proprietors of shares are requested to pay the said call to the secretary, at these offices, between the hours of Ten and Four o'clock. 15

Interest, after the rate of £5 per cent. per annum, will be allowed on sums paid in advance; and interest, after the same rate, will be charged on all sums not paid by the day above appointed. By order, GEO. A. JACOB, Secretary.

Basinghall Chambers, Basinghall-street, London, April 12, 1848.

PATENT GALVANISED IRON COMPANY—Trading under the FIRM of "MALINS & RAWLINSONS." 16

Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of this company will be HELD at the London Tavern, Bishopsgate-street, on Thursday, the 27th April inst., at One o'clock precisely, to receive the accounts to 31st December last, and to transact other general business of the company. By order of the board,

3, Mansion-house-place, London, April 10, 1848. S. VINCENT, Secretary.

TO PROPRIETORS OF STEAM-ENGINES, STEAM-BOAT COMPANIES, &c.—The SAVING of FUEL being at this moment an object of vast importance, M. REMOND, of 37, GREAT CHARLES-STREET, BIRMINGHAM, is ready to TREAT, on reasonable terms, with the OWNERS of STEAM-ENGINES for the application of his PATENTED IMPROVEMENTS, by which a great amount of fuel is economised, while, at the same time, more power is secured. The nature and extent of these improvements (which may be adapted at a comparatively small cost to any engine) were fully explained, and spoken of in the most favourable terms, in the *Midland Counties Herald* of the 30th of March—also in the *Mining Journal* of the 1st April—and they may be ascertained by a reference to Messrs. Beale, of Bradford-street, Birmingham, by whom they have been adopted with the most decided success. 17

TO ENGINEERS AND BOILER-MAKERS.

LAP-WELDED IRON TUBES, FOR MARINE AND LOCOMOTIVE STEAM-BOILERS, TUBES FOR STEAM, GAS, AND OTHER PURPOSES, *ALL SORTS OF GAS FITTINGS.* 18

THE BIRMINGHAM PATENT IRON TUBE COMPANY,

42, CAMBRIDGE-STREET, BIRMINGHAM, & SMETHWICK, STAFFORDSHIRE, MANUFACTURE BOILER and GAS TUBES, under an exclusive License from Mr. R. Prosser, the patentee. These tubes are very extensively used in the boilers of marine and locomotive steam-engines in England and on the Continent—are stronger, lighter, cheaper, and more durable than brass or copper tubes, and are warranted not to open in the weld.

42, CAMBRIDGE-STREET, CRESCENT, BIRMINGHAM.

WORKS—SMETHWICK, STAFFORDSHIRE.

LONDON WAREHOUSE.—No. 68, UPPER THAMES-STREET.

TO IRONFOUNDERS, ENGINEERS, MANUFACTURERS, &c.—TO BE SOLD, the LEASE of most desirable PREMISES, situate at DEPTFORD CREEK, with the PLANT, lately used for carrying on an Iron Roofing Business—consisting of FORGES, MACHINES, GALVANISED IRON SHEDS, an excellent OFFICE, &c. These premises contain upwards of 3000 square yards of land, well enclosed; an excellent wharf, with a water frontage of 115 feet.

For full particulars, apply to GLADSTONE & HOWETT, 19

Surveyors and Estate Agents, 115, New Bond-street.

PARTNER WANTED IN AN IRON FOUNDRY.—WANTED, a GENTLEMAN who can command THREE THOUSAND to FIVE THOUSAND POUNDS, to take the place of another retiring from an old established and lucrative IRON FOUNDRY—the practical partner remains in. This is a most desirable opportunity for any one anxious to embark in a safe and profitable business.—Apply to GLADSTONE & CO., Estate Agents, 115, New Bond-street. 20

PARTNERSHIP.—A PARTNER WANTED, in a well established MANUFACTURING CONCERN in LONDON—capital required from TWO THOUSAND to THREE THOUSAND POUNDS. The business is lucrative, and of a character which is, in every respect, agreeable as a pursuit.—Apply to GLADSTONE & CO., Estate Agents, 115, New Bond-street. 21

WARRINGTON GAS-LIGHT AND COKE COMPANY—RETORTS.—The directors are desirous of CONTRACTING for the SUPPLY of all RETORTS that may from time to time be required for the purposes of the company's works, for a period of five or seven years, at a fixed sum per annum. 22

Information may be obtained on application personally, or by letter, to the manager, Mr. Charles Smith, at the works, Mersey-street, Warrington.

Tenders (under seal), addressed to the directors, and marked "Tenders for Retorts," to be sent, under cover, to the law clerk. JAMES BARRATT,

Law Clerk to the Company, Warrington.

LAND DRAINAGE.—Mr. W. HUGHES, Civil Engineer, begs to announce, that he undertakes the INSPECTION of ESTATES to be DRAINED, the SETTING OUT of DRAINS, the RECLAMATION of LAND, and the GENERAL SUPERINTENDENCE of WORK, at a FIXED CHARGE PER ACRE, according to the extent of land.—Full particulars may be had on application to Mr. Hughes, C.E., at the office of the *Mining Journal*, 26, Fleet-street, London. 23

BLAENGWAWR STEAM COAL, CARDIFF—placed on the List of Coals supplied, by Contract, to the Government.—ORDERS for the BLAENGWAWR STEAM COAL RECEIVED by Mr. W. F. STANTON, No. 9, LOVE-LANE, EASTCHEAP; or by Mr. George Sully, agent, 1, Bute-street, Cardiff, Glamorganshire, South Wales. 24

TO BE SOLD, a 40-horse power HIGH-PRESSURE STEAM-ENGINE, with ONE BOILER, equal to 30-horse. The engine is quite new, and not now being wanted, will be sold cheap.—Apply to Mr. Charles Sanderson, Sheffield. 25

ANTIMONY AND SILVER-LEAD MINING AND SMELTING COMPANY. 26

1000 shares, of £5 each.

NOW AT WORK ON THE COST-BOOK PRINCIPLE.

Applications for shares to be made to Mr. R. Tripp, Fore-street, Exeter; Messrs. W. King and Co., Newcastle-upon-Tyne; and Mr. Bartlett, 58, Lombard-street, London.

CAMBORNE CONSOLS MINING COMPANY. 27

OFFICES,—*No. 14, FISH-STREET-HILL, LONDON.*

DEMELZA MINES.—A large quantity of SCRIP SHARES in the above MINES having been improperly RETAINED in SCOTLAND, all PARTIES are hereby CAUTIONED against TAKING, BUYING, SELLING, or otherwise DEALING with any DEMELZA SHARES, except those numbered as follows:— 28

Nos. 996 to 1000	Nos. 5941 to 5945
5351 to 5375	6001 to 6050
5801 to 5850	6051 to 6060
5901 to 5930	6296 to 6330

By order of the trustees, THOS. MASON, Secretary.

18, Charles-street, St. James's, London.

DYFNGWM LEAD MINES.—A FEW ADVENTURERS SHARES in these MINES yet TO BE DISPOSED OF.—The COST-BOOK LIES FOR SIGNATURE, for a few days, at the office of William W. Taylor & Co., mineral surveyors and mining sharebrokers, 2, Royal Exchange-buildings, London. 29

SILVER AND LEAD MINES, in the CANTON DU VALAIS, SWITZERLAND.—From two levels, in a mountain, full 1000 tons of silver and lead ores, estimated at £16 per ton, are now at surface. The vein of ore whence they were drawn, is ascertained to be 47 feet in width, and extends through the height and breadth of a high mountain. The mines are in full operation, producing ores equally rich as those extracted. One-fifth part of these mines have been purchased by parties who will spare a few of the shares. 30

Application for further information, terms, &c., may be made at the Royal British and Foreign Mining Offices, 140, Strand, London, up to, and inclusive of, Saturday, the 29th April inst., and the allotment will be made on the 1st May.

TREWALLACK MINE.—TO BE SOLD, BY PRIVATE CONTRACT, an excellent ENGINE, for pumping or drawing, about 20-inch cylinder, in good condition, with a boiler of 10 tons.—For particulars, application to be made to Capt. John Lean, Camborne; or to Mr. H. Ellery, Truro. 31

N.B.—There are also several tons of pitwork—viz.: 18 pumps, 13-inch; 2 working-barrels, 13-inch, nearly new; 2 doorpieces, and 2 windbores.

MINING OFFICES—ESTABLISHED FIVE YEARS.—THOMAS P. THOMAS begs to inform his friends and the public that he has REMOVED from No. 18, Threadneedle-street, to No. 3, GEORGE-YARD, LOMBARD-STREET, LONDON (late Messrs. Phillips and Tiplady's). 32

N.B.—Dealer in English and Foreign Funds, Mining, Railway, Gas, and other shares.

WILLIAM W. TAYLOR & CO., MINERAL SURVEYORS, MINING SHAREBROKERS, &c., 33

No. 2, ROYAL EXCHANGE-BUILDINGS, LONDON.

MR. R. TREDINNICK, THREE KING'S COURT, *LOMBARD-STREET, LONDON,* 34

Continues to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously, upon personal application.—MONEY ADVANCED upon the above securities.

MR. JAMES STRIDE, PARLIAMENTARY AGENT, begs to announce, that he has COMMENCED BUSINESS as MINING, SHARE, ESTATE, and GENERAL AGENT. He has ON SALE, SHARES in the best DIVIDEND-PAYING and other MINES. The earliest and most authentic information, and the full benefit of the market value, afforded to buyers and sellers of mining and other property—MINES INSPECTED AND REPORTED ON.—London, 35, Charing-cross. 35

JAMES LANE, MINING SHARE DEALER, 75, *OLD BROAD-STREET, LONDON.* 36

WILSON & FRASER, 2, WELLINGTON-BUILDINGS, LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS. 37

BRITISH MINING OFFICES—NOTICE.—The BUSINESS of these OFFICES will henceforth BE CONDUCTED at No. 25, FLEET-STREET, LONDON, and No. 4, STAMP-OFFICE BUILDINGS, MANCHESTER, to either of which offices communications are requested to be addressed. The correspondence and reports, with the accounts, of the respective companies may be inspected at all times, on application. WILLIAM SHEARMAN,

British Mining Offices, Feb. 17, 1848. JAMES TRUSCOTT. 38

MONEY.—MESSRS. KILLICK & CO. (late Winstanley, Killick, & Co.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms: they also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged. 39

6, Bank Chambers, opposite the Bank of England.

ASSAYING AND ANALYSIS.—Mr. MITCHELL begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTORIES, that he still continues to CONDUCT ASSAYS and ANALYSES of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY. 40

23, *HAWLEY-ROAD, KENTISH TOWN, LONDON,*

to which address communications are to be forwarded.—Instruction in all branches of assaying and analysis as usual.

ADCOCK'S PATENT SPRAY PUMP.—This important INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION, the PATENTEE is ready to RECEIVE, and to execute, ORDERS.—Apply to Henry Adcock, C.E., at his offices, No. 2, Moorgate-street, London, where pamphlets, descriptive of the invention, may be had; at the office of the *Mining Journal*, 26, Fleet-street; and through any respectable bookseller—price 6d. 41

THE "GREAT BRITAIN" STEAM-SHIP.—On Thursday, the general stores and furniture of the *Great Britain* steamer were brought to the hammer in Liverpool. The sale appeared to excite considerable interest—the room, from the commencement of the sale, being much crowded with purchasers and others. It may be of some interest to give the particulars of the stores for this celebrated ship. The furniture of the cabins and berths included 228 hair mattresses, 406 feather pillows, 580 blankets, 970 linen sheets, 344 counterpanes, 1556 towels, 518 bed curtains, 791 pillow cases, 801 dusters and glass cloths, 153 table cloths, 28 sofa cushions, 85 painted chests of drawers, 116 dressing glasses, 88 painted boxes, besides several ranges of oak dining-tables, forms, carpets, matting, and chamber services. The china, glass, and culinary articles consisted of an immense quantity of decanters, and glasses of various descriptions, table, breakfast, and tea services, a huge lot of large copper steam-cooking apparatus, besides a countless number of other miscellaneous articles. Notwithstanding the great number of articles offered, they did not form the whole of the stores, but only that portion which was secured after the noble ship met with her unfortunate disaster in Dundrum Bay. For the most part, the articles offered for sale gave evidence of rough usage and dilapidation, but this did not seem to damp the spirit of competition on the part of purchasers.

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THE COPPER ORE DUTIES QUESTION.

In the House of Commons, on Monday evening, the CHANCELLOR of the EXCHEQUER moved the order of the day for a committee on the copper and lead duties; whereupon,

Sir CHARLES LEMON moved "That a select committee be appointed to inquire into the effect of the existing duties on the importation and production of copper ores." He said that the theory of free trade did not condemn duties imposed for revenue when they were not injurious to trade; and, if a committee were granted, he should be able to prove that the duty on copper ore was not injurious, while it brought in a large sum yearly to the revenue of the country. This was not the time to stand up for protection to any class to the injury of the community at large; but he should be able to maintain that these duties were not in any way injurious. He understood the Chancellor of the Exchequer the other night to say, that this bill was partly founded upon the statements made to the Board of Trade, but these he should be able to prove were greatly exaggerated. He knew his right hon. friend chiefly relied on the public and official documents, but he should not shrink from meeting the facts which they disclosed. They showed that there had been since the year 1844 a considerable falling off in the quantity of ore imported into this country from Chili, and a corresponding diminution in the amount of revenue—that there had been a falling off in the quantity of copper sent from this country to France, and a considerable export of coal sent to Chili to be employed in the reduction of copper ores. He admitted all these facts, but he denied that they proceeded from the small duty now levied upon the import of copper ores. It was imprudent to give up a revenue of 50,000*l.* or 60,000*l.* a year, when the object which they had in view was to be obtained by other means. The whole amount of copper ore smelted in France, including the French provinces and Algiers, and its importations from all parts of the world, amounted to only 1000 tons a year, which were capable of yielding 250 tons of copper; whilst the ordinary importation of copper into France had been 8000 or 9000 tons annually. It was said that we were losing our markets abroad because we were under-sold there; but, if that were so, price became an important element in the consideration of this question, and that element a committee of the House would be the fittest to consider and decide upon. The hon. Member concluded by expressing an anxious hope that the Government would accede to his motion, as he felt satisfied that the labours of the committee would put the House in possession of much valuable information, and enable it to legislate with advantage upon this important department of our trade.

The CHANCELLOR of the EXCHEQUER commenced by reminding the House of the state of the law on the subject previously to the tariff of 1842. Before that year all foreign copper ore was excluded from home consumption in this country, but it was allowed to be brought home and smelted in bond. The result was, that it was allowed to be brought into this country in foreign vessels, smelted in bond, and exported to foreign countries. The importation of copper ore under that law showed a constant and progressive increase. In 1838, the quantity of copper ore imported was 26,900 tons; in 1839, 30,000 tons; in 1840, 41,000 tons; in 1841, 48,000 tons; in 1842, 49,000 tons; in 1843, 55,000 tons; in 1844, 58,000 tons. The increase after the tariff of 1842 was attributable to the fact, that the law had not, until 1845, actually come into operation in consequence of the arrangements which existed between the capitalists in this country and the producers of copper ore in Chili. The state of things in Chili was, that the people of that country found it much more advantageous to send copper ore to this country to be smelted; and evidence was given before the committee which had been appointed to inquire into this subject, that the Chili houses which had attempted to smelt the ore in Chili had been brought to ruin, and, in point of fact, smelting at the time the tariff of 1842 came into operation was at an end there. He need not state to the House the advantages which accrued to the manufacturers of this country from the smelting of this foreign copper ore, the employment it afforded, the profits it yielded, and the stimulus which it gave to the importation of our cotton and woollen goods. By the Act of 1842 foreign copper ore was admitted for use in this country, but a duty was imposed on all copper ore brought here. No copper ore could be smelted in bond free of duty, and again exported. No copper ore could be brought to this country free of duty except in British vessels. The consequence of all this was a great increase of freight charge, and a sensible diminution in the exports of the article. The smelting-houses in Chili were restored, and in many European towns it was found more convenient to establish smelting-houses than to come here for copper ore, and accordingly such places were erected in Hamburgh and other cities. He did not mean to say, that the smelting of copper ore was carried to any great extent in Europe; but the increased amount of copper ore imported by Hamburgh, within the last two years, was very extraordinary. In 1846 the amount of this ore imported there was 60,000 tons—in 1847, 407,000 tons; and a proportionate quantity took place in the United States. He would read to the House a letter addressed to him by her Majesty's consul at Philadelphia (Mr. W. Peter), who had been formerly a Member of that House. He was a Cornishman, and he was sure his hon. friend (Sir C. Lemon) would place confidence in his statement:—

"Already have two large companies been formed in this country—viz.: the Incorporated Baltimore Company, and the Revere Boston Company—who have erected furnaces, and are smelting considerable quantities of American and Cuba ores, which ores, but for our high duties, would have been all smelted in England and Wales. Other smelting companies are also talked of—in New York, New Jersey, Philadelphia, and Richmond, more particularly at the latter place, which, from its situation at the head of the Eldewater Navigation, on the James River, and from its vicinity to the coal mines, is well adapted to the purpose.—*Philadelphia, Sept.* 13, 1847."

The copper imported to France from this country had considerably fallen off; and from Chili the French imports of this article had considerably increased. He did not mean to say, that there had been a falling off in the gross; but there was this change—that, instead of France importing smelted copper from England, she imported it from Chili. In 1845, the quantity of copper first smelted (it was smelted twice) imported by France from England was 70,000 tons; in 1846, 44,000 tons; in 1837, 37,000 tons. In the same year, the imports of copper from Chili into that country increased by the amount of 200 tons in 1845, 700 tons in 1846, and 1100 tons in 1847. There had been a great falling off lately in the amount of copper ore imported into England. In 1844, as he had previously stated, it was 58,000 tons; in 1845, 56,000 tons; in 1846, 51,600 tons; and, in 1847 it had fallen off 41,500 tons. That was an enormous falling off, and it was seldom there was so great a decrease in the import of the raw material as 10,000 tons in one year. He was unwilling to sacrifice the revenue; yet it was but a falling revenue he was about to sacrifice; if he did not sacrifice that, he must sacrifice the trade altogether. Now, if he suffered a loss in the revenue, at any rate he felt that he was benefitting the trade of the country by continuing in the course which the Government had adopted. (Hear, hear.) His hon. friend had argued the question very much as a matter of protection. His (the Chancellor of the Exchequer's) own real belief was, that this was a parallel case to that which, on a former occasion, he brought forward with regard to the duties on the importation of foreign wool. (Hear, hear.) He believed that the quantity of metal produced from the fusion of foreign copper with English copper was larger than the quantity would be if they were fused separately. So that, under the present system, the English producer was a considerable gainer in point of quality. He believed his hon. friend would admit that. And, in the next place, he believed that the mixture of the two metals was exceedingly advantageous in point of quality. His hon. friend, the member for Birmingham (Mr Muntz), would be better able to explain that question; but he (the Chancellor of the Exchequer) had been informed, that the fusion of the two metals led to such an improvement in the manufactured copper articles that the sale became materially increased. And it should not be forgotten that nearly one-half of the copper raised in this country was exported for foreign consumption. He found that the amount of copper ore so exported had considerably increased since the alteration in the duties. The quantity exported in 1843 was 57,000 tons, whilst in 1846 it had increased to upwards of 70,000; so that the capitalists and artisans of England engaged in this department of manufacture had been materially benefitted. He really thought that he hardly need trouble the House with any further statement upon this subject. He had refrained from entering upon those points on which his hon. friend had himself admitted that there would be considerable dispute. His firm belief was that, without entering into the question of free trade or protection, the manufacturers and workmen of this country had a direct interest in the increased importation of the raw material. He believed that the English producer would be benefitted by the introduction of a larger quantity of foreign copper. (Hear, hear.) All the statements which he (the Chancellor of the Exchequer) had made were made on the authority of documents of indisputable accuracy. He scarcely thought then that his hon. friend had made out the slightest case for a committee of inquiry. He would not now enter into the question of the amount of the duty, as that could be better discussed when the House went into committee. There would certainly be a slight sacrifice to the revenue, but it really was so very small that he hoped the House would not assent to any amendment on the proposition of the Government.

Mr. CAREW had never been a high protectionist; neither did he consider the rules of free trade universally applicable, and the present, he thought, an exceptionable case. His confidence in free trade doctrines had not been increased by events which had occurred in other countries; for, while they were here throwing their ports open to foreign produce their neighbours were following an opposite course. The arguments of the Chancellor of the Exchequer tended rather to lead the House back to the system which had prevailed before 1842, than to induce them to carry out the application of the principles then introduced. He hoped the House would agree to the motion of his hon. friend, for the labouring classes in the mining districts were peculiarly interested in this question. The House might not be aware that those classes were themselves speculators in mines to a considerable exient, and that they would be directly affected by any measure which would have a tendency to lower the value of the ore. He was sure that hon. gentlemen would be most anxious to consider the case of these labourers, and that they would not afford any ground for the notion that those classes were not represented in that House, and that their interests were, therefore, neglected. (Hear, hear.) He trusted, especially as an alteration of the Navigation Laws was contemplated, which would have a material effect upon the rate of freights, that the House would not hastily adopt the proposal of the Chancellor of the Exchequer, but that they would be anxious to take measures to secure from injury an important branch of the trade of this country.

Mr. LABOUCHERE would feel the deepest regret if the classes referred to by the hon. gentleman who had just sat down, and especially the Cornish miners, who had always been distinguished by their good conduct as much as by their industry and perseverance—(hear, hear)—sustained any injury from the measure proposed by his right. hon. friend; but he (Mr. Labouchere) believed that, when the House came to consider the effects of that measure, they would feel that no apprehension of such a result need be entertained. The Chancellor of the Exchequer had told them that, in this case, he was not giving up revenue, but that revenue was leaving him; for, while the present tax ruined the trade, it dried up that source from which alone any revenue could accrue. But this was not the greatest objection which he (Mr. Labouchere) entertained to the continuance of the duties upon copper ore in their present shape. He objected to the maintenance of those duties on the ground, that they were fast leading to the utter destruction of one of the most valuable and important trades of this country. When an alteration in the rates of duties on copper was proposed by the right hon. Member for the University of Oxford (Mr. Gladstone), he (Mr. Labouchere) expressed his fears lest that measure might produce the results which had since followed; and he implored the right hon. gentleman not to put a stop to the power of smelting copper in bond, unless he was certain that such a measure would not divert that important branch of trade from this country. He (Mr. Labouchere) believed that, if the right hon. gentleman were now superintending the commerce of the nation, he would be convinced that it was necessary to take one of two courses—either to revive the power of smelting copper in bond, or to admit copper ore at merely nominal duties. He (Mr. Labouchere) considered that, of those two courses, the one taken by the Chancellor of the Exchequer was the best. He did not blame the right hon. gentleman opposite (Mr. Gladstone) for the experiment he had made; but he thought it was clear that they could not continue to impose the duties now levied upon foreign ore without destroying one of the most valuable branches of trade in this country. Some stress had been laid upon the burdens to which the copper miners of this country were subjected, and apprehensions had been expressed lest foreign copper ore might be introduced to a great extent, to the injury of the poor miners of Cornwall. He (Mr. Labouchere) begged the House to remember what protection the English miners enjoyed, and which they naturally possessed from the cost of freight necessary to bring foreign ore to this country. He believed that the purest ores imported into this country from Cuba contained only 10 per cent. of copper; and, taking the freight at 3*l.* per ton, there was a protection of no less than 30*l.* upon every ton imported. In the case of Chilian the freight was 8*l.* per ton; and there was a protection of 50*l.* per ton in the case of ores containing 10 per cent. of copper, 60*l.* in the case of ores having 12 per cent. of copper, and 100*l.* where there was 5 per cent. of copper. This showed the large amount of protection given to this description of ore; and, unless it was meant that they should apply the principle of protection in its most extreme and aggravated form, there was no ground for maintaining it in the case of copper ore. He hoped the House would not consent to the committee, for the appointment of which no valid reason had been given. The facts of the case were before the House; and if they should not consent to the reduction of the duties in this instance, he should despair of ever seeing any proposal to free the commercial code of this country proposed with any chance of success.

Mr. ROBARTES was averse to all duties that were imposed for purposes of protection, and considered them opposed to the policy that had recently received the sanction of that House.

Mr. CARDWELL wished to say a few words just to express how extremely glad he was that the time had arrived when this duty, which had been condemned by successive Governments, was at length to be abolished. It was proposed, that they should send the subject to a committee; but if they did so, he would ask what possible question was to come before them? Were they to inquire whether there was likely to be a falling off in the revenue? Why, they had had a successive and uniform and rapid falling off in this branch of the revenue; and it was plainly and clearly declining from under the Chancellor of the Exchequer's feet. Were they to inquire into the import and export trade? Information on these points was already on the table of the House. What, then, could be the object of the committee? If there was a single branch of trade in which we were making greater progress than another it was the metal trade; and why was equal progress, as regarded our exports, not made in copper? It was this impolitic duty, which was a duty on the raw material. It was a duty, therefore, which pressed with peculiar aggravation; and it was one which ought especially to be done away with, because the increased consumption of that raw material led to an increased consumption of other raw materials used in the manufacture—the use of the one causing the increased consumption of the other. Had they not printed evidence to the effect that, by the imposition of a duty on raw copper, they promoted smelting manufactories in Chili, Hamburgh, and in America? But what was the interest of the Cornish miners? Why, that all the smelting establishments should be in Great Britain; because then they would become decidedly the greatest gainers. (Hear, hear.) He did not remember a single commercial case in which there was so uniform an expression of opinion from all sides of the House, or in which there was so remarkable a concurrence of facts and agreement of interests. He thought, therefore, that, without a single fact to inquire into, nothing would be gained by the proposed committee but delay. Successive Governments had admitted that it was only a question of revenue; and now, when the Chancellor of the Exchequer appeared to be able to spare the amount—(a laugh)—he thought the sooner they consented to the abolition of the duty the better. (Hear, hear.)

Mr. MUNTZ agreed with the hon. Member for Liverpool, that no advantage would be gained by the appointment of the committee; that it would only lead to delay, which would be injurious to those on the other side.

Mr. WYLD said that, if the committee were appointed this moment, it would not be of the least benefit, inasmuch as the copper ore smelted in this country was in the hands of six companies, and six companies alone. There was the most perfect monopoly of copper smelting that could exist in the world; and, although he had heard that copper smelting was springing up in other quarters of the globe, it pertained only to Swansea. We had there six companies with a power of possessing the whole amount of copper ore, with a gigantic monopoly, not only of the copper ores of Cornwall, but of Cuba and Chili. The reduction of duties proposed by the Government would throw into the hands of the copper smelters of Swansea a greater monopoly than they had hitherto enjoyed. The copper miners of Cornwall were, to a great extent, free traders, and it might seem out of place that he should ask the House to consider this question as a question *per se*. There was a population of nearly 101,000 employed in raising these copper ores; and these people, if they were not to be retained from the raising of the mines, must be maintained from the general rates. It had been stated that the people of Chili used to consume a larger portion of our manufactures than they now did. That had arisen solely from the Americans having interposed between them and our manufactures. He thought that, whatever the reduction of duty might be, there was a case for a special committee.

Mr. SCHOLEFIELD expressed his approbation of the course taken by the Government.

Mr. W. E. GLADSTONE said, that as it had fallen to his lot in 1842 to propose to the House the abolition of the former system of smelting copper ores in bond, and the imposition of this duty on foreign copper ores on their admission into the British market, he ought not to content himself with an absolutely silent vote, but must express his cordial assent to the proposition of the Chancellor of the Exchequer. He thought that the hon. Member for Bodmin need not have anticipated that the House would be surprised at his claiming protection for copper ores, whilst he professed the general principles of free trade. There was no phenomenon more common, as far as his experience went, than that of an interesting class of gentlemen, devoted to the interest of free trade, who were supplied with some special case in which their constituents were interested; but, when the test of experience was applied to these special cases, the circumstances which were thought to distinguish them vanished, and people became incredulous as to the particular circumstances on which they were alleged to rest. The hon. Member for Bodmin had said that there was a monopoly of the smelters in this country. Assuming that to be the fact, he thought the fair inference was, that they ought to do everything in their power to enlarge the facility of access to the materials with which the trade was carried on. The greater the abundance of materials, and the greater the cheapness, the more likely was additional capital to be introduced into the trade, and the monopoly broken up. His hon. friend, who sat behind him, had referred to the case of the labourers of Cornwall as being interested in the mines of the country; but his hon. friend had omitted to assert, that there was really no practical difference between the proposition now before the House and the interest of the Cornish miners. He did not see that it followed from the adoption of this motion, that the average price of Cornish ores was to be diminished. He had not heard an answer to the argument introduced by the hon. Member for Liverpool, that Cornish ores stood in the nature of material accessible to the smelting of foreign ore, and that the more you introduced foreign ore, the more you increased the demand for Cornish ore; that, to a considerable extent, the Cornish miner was dependent on the introduction of foreign ores to enable him to raise ores which, unless he had the foreign power, would not pay the expense of raising. As to the committee, he did not think the speeches of his hon. friends who opposed the motion an argument against the committee. He wished it to be impressed on the attention of the House that the hon. baronet, the Member for Cornwall (Sir C. Lemon), in whom, as an advocate, the miners of Cornwall had always been extremely fortunate, did not state that the adoption of this motion would be in any degree prejudicial to the interest of the Cornish miners. In additional to the general argument which would lead the House to remove the restrictions on trade, there were peculiar arguments attaching to the trade in metals. If there was any one description of trade for which the English people had a peculiar genius—which was properly and specially a national trade—which they should use every effort to encourage and develope, it was that trade in all its branches, whether of iron, copper, or of any other metal. As to the system of smelting in bond, he must say that he did not at all repent of having been the instrument of putting an end to that question. Whatever alternative it might be found necessary to resort to, he should have resisted any return to that system, because it went to supply the foreign manufacturing market with manufactured copper on more reasonable terms than British manufacture. On the other hand, the English consumer would be subject to the grievance of having to pay from 5*l.* to 10*l.* per ton more for copper than those who used the foreign metal. It was, therefore, impossible to continue the system of smelting in bond, and there was only the alternative of abandoning it or continuing the present duties. After the debate which had just taken place, he could not doubt that the House would at once adopt the proposition of the Chancellor of the Exchequer.

Lord G. BENTINCK said, that the right hon. gentleman who had just sat down had observed, that the hon. Member for Bodmin was one of the most common phenomena of the present day. He thought that the right hon. gentleman was himself quite a phenomenon, though certainly not a common one. He apprehended that it was a new axiom in political economy that the greater the supply the better would be the price, and the greater the demand. He (Lord G. Bentinck) did not, like the hon. Member for Bodmin, treat this as an exceptional case. He opposed the measures of her Majesty's Government, not because the case was an exception *per se*, but because it was one of a bad gang of measures of free trade. It was a measure by which it was proposed to introduce the produce of foreign industry, almost untaxed, into this country; and if ever there was a time when it was unjustifiable in her Majesty's Ministers to make such a proposition as this, it was when the Chancellor of the Exchequer came down to the House and announced a deficiency of nearly 3,000,000*l.*, and when he was obliged to call upon the country to submit for three years longer to the odious income tax. The right hon. gentleman proposed to cast away at this juncture a revenue of 40,000*l.*, raised from foreign industry, thereby giving great encouragement and protection to the slave-owners of Cuba against the copper workers of Cornwall. But, when the right hon. gentleman (Mr. Gladstone) would make it out that this was rather a benefit than an injury to the miners of Cornwall, and when the right hon. gentleman the President of the Board of Trade alleged that the ores of Cuba produced from 5 to 10 per cent. of metal, these statements stood in utter contradiction with those which he (Lord G. Bentinck) had received from Cornwall.

Mr. LABOUCHERE explained. He had stated that some of the ores of Cuba produced from 5 to 10 per cent. of metal, but he had never stated that there were not richer ores there.

Lord G. BENTINCK remarked, that if he had not got up to set the right hon. gentleman right, the House would have gone away with the impression that the ores of foreign countries averaged from 5 to 10 per cent. of metal, for the right hon. gentleman entered into a long calculation to show that every ton of foreign copper would give a certain amount of additional employment. Now the fact was, that on the average the ore produced in foreign countries contained 21 per cent. of metal, while the ores of Cornwall averaged under 8 per cent.; so that the ores of Cuba and Chili were nearly threefold as rich as the ores of Cornwall. Therefore, 52,000 tons of foreign ore would furnish as much pure copper as would be produced by the annual amount of ore raised in Cornwall. He was informed that, on the average, about 150,000 tons of copper ore were annually raised in Cornwall, and these 52,000 tons of foreign ore would consequently displace all the miners of Cornwall, consisting of 21,000 families. Well, but then a pitious tale had been told about the smelting trade. Since 1842, however, the price of copper ore had fallen 12*l.* 5*s.* per ton, while the price of smelted ore had risen 6*l.* per ton—so that the great monopoly of Swansea smelters, out of the diminished profits of the miners of Cornwall, had cleared 18*l.* per ton more than they did in 1842. These were the monopolists to whose rescue they were told to come to-night; and it was to put 40,000*l.* a-year more into the pockets of these monopolists, or at least to divide that sum among them and the foreign owners of mines in Cuba and Chili, that the House was called upon to fling to the winds 40,000*l.* of revenue, which the Chancellor of the Exchequer ought well to know was sufficiently needed for other purposes. For these reasons, though he needed no committee of inquiry, and though he was prepared to oppose the proposal of the Government whenever it came before the House, on the ground that no article of foreign produce ought to come into this country untaxed, so long as England laboured under a higher amount of taxation than she could well bear, he should vote for a select committee. He should prefer to meet the proposition of the Government boldly in front; but, as he presumed that the effect of defeating them, by obtaining a select committee, would be utterly to overthrow their scheme, he cared not whether he assailed them in front, flank, or rear; and he should, therefore, give his cordial support to the motion of the hon. baronet (Sir C. Lemon).

Mr. E. TURNER said the whole county of Cornwall was in favour of free trade in copper ore, because the richer ores of foreign countries were required to be smelted with the poorer produce of our own country. He should, therefore, support the proposition of her Majesty's Government.

Mr. RICARDO said, that in 1839 copper ore was allowed to be imported free of duty, and yet the produce of the Cornish mines was greater in that year than it had been since—a fact which seemed to bear out the statement of the Chancellor of the Exchequer, that Cornish ore must, to be made available, be mixed with foreign ore. The produce of the Cornish mines was 12,466 tons in 1839, 11,259 tons in 1842, 11,593 tons in 1845, and 11,820 tons in 1846. The same arguments which were now directed against the importation of foreign ore were formerly employed against the admission of foreign wool, but the adoption of that measure had had the effect of greatly increasing the consumption of British wool.

Mr. HENLEY said, that the Chancellor of the Exchequer's proposition was supported by the most contradictory arguments; the only person who had spoken frankly on the occasion was the hon. Member for Birmingham, who said that his constituents having been ruined by the introduction of foreign goods, he was resolved to extend the advantages of the free trade system to other parts of the kingdom. (A laugh.) He thought a good case had been made out for inquiry, and he should vote for it if the House went to a division.

Mr. WILSON said, that the statements made by the noble lord himself were sufficient to induce the House to concur with the Chancellor of the Exchequer. The noble lord had said that the average quality of the ore imported was 21 per cent. of pure copper, while that of the native ore was only 8 per cent. That fact was of itself sufficient to show the impossibility of our manufacturers competing with those of foreign countries. The noble lord had spoken of the labourers engaged in the manufacture of copper utensils for the foreign markets; but, surely if he wished to encourage native industry he ought to allow the importation of the raw material for the employment of those persons. The noble

lord had also alluded to the monopoly which the smelters possessed, and he should have borne in mind that the proposition of the Government was to reduce the very article which those smelters used. Upon these grounds he (Mr. Wilson) would support the proposition of the Chancellor of the Exchequer.—After a few words from Sir C. LEMON,

The House divided; the numbers were—For going into committee 102; against it 35; majority 67.—The House then went into committee on the copper and lead duties.

The CHANCELLOR of the EXCHEQUER then moved the resolutions of which he had given notice:—"That, in lieu and instead of the duties of Customs now payable in respect of the articles enumerated in the schedule hereunto annexed, upon their importation into the United Kingdom, there shall be levied, collected, and paid, the rates of duty specified in the said schedule:—Copper ore, 1s. per ton; regulus of copper, 1s. per ton; old copper, fit only to be manufactured, 2s. 6d. per ton; unwrought copper—viz.: in bricks or pigs, rose copper, and all cast copper, 2s. 6d. per ton; copper part wrought—viz.: bars, rode, or ingots, hammered or raised, 2s. 6d. per ton; copper in plates, and copper coin, 2s. 6d. per ton; pig and sheet lead 2s. 6d. per ton."—On the first resolution,

Mr. W. E. GLADSTONE said, that he had given notice that he would move "If the House shall go into committee on the copper and lead duties, that the several articles recited in the resolutions of the Chancellor of the Exchequer, shall be admitted free of duty;" but, as the question involved was of the utmost importance in its direct and indirect bearings, he would not go into it at that hour. He would again bring it forward on going into committee on the bill to be founded on these resolutions. He would also then ask the Chancellor of the Exchequer if there was any objection to deal with the tin in the same manner as with the lead and copper duties?

The CHANCELLOR of the EXCHEQUER was glad that the right hon. gentleman had postponed the discussion on this question, and, at the proper time, he would be ready to mention those reasons which would compel him to object to the motion. It had not occurred to him that any practical benefit could have been derived from dealing with the tin duties in the manner suggested, but he would give the matter every consideration.

Mr. BROTHERTON called attention to the lateness of the hour (a quarter to 1 o'clock), and moved that the chairman should report progress and obtain leave to sit again.

Mr. LABOUCHERE entreated the hon. gentleman not to persevere in his motion. The parties engaged in the copper trade had already suffered serious injury from the delay which had arisen in carrying into effect the announced intention of the Government.

Mr. BROTHERTON expressed his willingness to withdraw his motion, but

Lord G. BENTINCK insisted upon a division.

The House accordingly divided; the numbers were—For the motion 13; against it 77; majority, 64.—The resolution was agreed to. The other resolutions were then agreed to: and the report was ordered to be received on Tuesday.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Royal Botanic—Inner Circle, Regent's-park	3½ P.M.
MONDAY	Medical—Bolt-court, Fleet-street	8 P.M.
	Antiquaries—Somerset-house	2 P.M.
TUESDAY	Medical and Chirurgical—53, Berners-street	8½ P.M.
	Zoological—11, Hanover-square	9 P.M.
WEDNESDAY	Microscopical—21, Regent-street	7 P.M.
THURSDAY	London Institution—Finsbury Circus	12 A.M.
SATURDAY	Westminster Medical—17, Saville-row	8 P.M.

On Mining, & the Practical Applications of Geological Science.

PROFESSOR ANSTED'S LECTURES AT KING'S COLLEGE.

LECTURE XXI.—MINING FOR METALS CONTINUED—THE ADIT LEVEL—SHAFTS—DRIFTS—TIMBERING—TRIAL SHAFTS AND ADITS—METHODS OF WORKING—SEPARATION AND LIFTING OF THE ORE, &c.

Professor ANSTED said, that in the previous lecture he had commenced a description of the methods of conducting mining work underground; and, amongst other matters, had mentioned the necessity and importance of the adit level, for the purposes of drainage. Although drainage was the main object of the adit level, still this was not always a dead work, as it often led to the discovery of lodes in the country which it crossed. He looked upon the construction of the adit level as one of the best tests of the conduct and capabilities of the mining engineer, because it involved generally not only a large expenditure, but some general scientific knowledge to carry it out fully, and in the best manner. It was often the practice to drive the adit level upon some cross-course, if there happened to be one conveniently placed and composed in a large proportion of fine clay in a soft state. This was, of course, done with a view of lessening the expense, but the practice was not without some disadvantages, as it occasionally was the means of allowing a great deal of water to run into the mine, by percolation, and such a drift was difficult to keep in good order. It was at any rate extremely necessary to consider the nature of the cross-course, and the probabilities of being able to render it safe, for the action of the water was more than sufficient, in many cases, to choke it up. In this way the condition of the cross-course was a most important point to be considered before it was selected, as it might otherwise become a great expense instead of a saving. Adit levels were of different kinds. In some extensive mining districts they had one immense general draining level at the lowest point, and with this a large number of main levels from the various mines communicated. The quantity of water thus delivered was amazingly large, and a great deal of calculation was necessary to arrange the charge, and the work being done at the joint expense of a number of mines, disputes often arose as to the proportion of expense due from each, the amount of work done, and the precise amount of advantage each mine derived from it. The Great Consolidated Mines of Cornwall had a level of this kind nearly five miles in length, and the branches which ran into it amounted to about 30 miles, a great portion of the whole being at a considerable depth below the general surface. A similar instance was furnished in Saxony, where there was a direct level four miles in length, by which the water from an immense number of branches was carried away; and, in all mining countries, the quantity of levels was large. These adits were expressly connected with the drainage of mines, and it was necessary, for their proper construction, that great attention should be paid to the geological condition of the country, and the most convenient position of the outfall. When mines were drained in this way, the works were, of course, intended to last for a very long time.

The main pump-rods, as in the Fowey Consols (he alluded to this mine because a diagram of its workings was before him), and other mines in Cornwall, passed through one main shaft, which communicated with the deepest part of the mine. This shaft was, therefore, denominated "the pumping shaft," its main use being to lift the water to the adit, and thus secure its removal in the speediest and best manner. The water, indeed, was rarely raised at once to the surface, for that would be considered very bad mining, except when the shaft was near the sea; because, in most cases, there was fall enough to induce the driving an adit, and, when the water is lifted too high, a good deal is apt to be lost by falling again into the mine. Indeed, the necessity of conveying the water in safety to the outfall was of the greatest importance, though it was often a matter of difficulty so to construct the mine that none of the water, once conducted into the adit, should get back. He knew a case in which a saving of 2 per cent. in the cost of pumping, in a large mine, had been effected by improving the general condition of the drainage, and preventing water which had been raised from falling back in different parts of the mine. There was, however, in the best constructed mines, always a great deal of labour lost; for it was seldom the case that soft material, and flookans, and small crevices, which would allow water to pass through them, were not crossed by the adit, and a certain quantity would get back, nobody knew how. This, of course, rendered pumping all the more necessary, and, in this respect, the modern miner had many advantages over those of former times. Formerly, it was a common thing to drain mines by ordinary lift-pumps, by which the water was lifted successive heights of 30 ft., the power used being water-wheels of various kinds, a method called the rag and bucket system, and other contrivances. These were mostly now superseded by steam in Cornwall, and by more artificial pumps, on a large scale, on the continent. It was sometimes necessary, in consequence of much water coming in in the upper part of a mine, to collect it there, and not to allow it to fall to the bottom, as there was thus an immense saving of labour. In these ways, it was obvious that a great deal of management was necessary; and it was advisable to adopt some general system of drainage, with such alterations as might be suggested and enforced by circumstances.

The talented lecturer then proceeded, by means of several excellent diagrams, to explain the other levels, or drifts, required to obtain the ore. There were commonly several shafts. The pumping-shaft was generally distinct, and worked with particular reference to the drainage. In the first instance, however, it was customary to run a drift corresponding with the widening-headway of a coal mine from this shaft, for the purpose of laying bare a considerable portion of the mine. The shafts were never, or very rarely, sunk upon the lode, because the latter being usually more or less inclined, such a course would involve a great waste of labour in lifting the ore, as compared with a vertical shaft, up which it would be lifted at once by water or steam power. The usual plan was, to sink the shaft as near, or through as many lodes as possible; and from this, the ore was reached by horizontal galleries, generally about four feet wide, and varying in length, according as the lode approached, or diverged, from the shaft. The distance of these levels from each other was, generally 10 fms., but varied from 10 to 20 fms.; and, by this means, the lode was attacked at many different points at the same time, allowing a large quantity of work to be carried on, and a considerable amount of produce obtained. Vertical underground shafts were often cut at the further extremities of these horizontal galleries, and these were called winzes. They were sometimes cut through dead ground, but were beneficial, inasmuch as they laid bare the country and the lodes between the stopings, or horizontal galleries, and also improved the ventilation of the mine. These winzes were, therefore, important; and, in cases where mining operations were conducted with great energy, they were often worked from above and below at the same time, to meet in the middle. In laying out works of this kind, accurate dialling and calculations were required; the result was often so satisfactory, and the shaft so true, that when the work was completed, and they met for the first time in the middle, no indications of the joining would be perceptible.

In working drifts and levels, it would depend upon the nature of the ground whether supports were necessary for the roof, and in what degree. The simplest kind of such supports was required when one side of the gallery was more likely to fall than the other; and, in that case, slant timbers only would be required on the weak side. This happened often when working on a hill side, or in the adit level, where there was a good deal of running water. In most cases, however, it was necessary to have a more complete framework. In Cornwall, the timber most commonly in use for this purpose was Norwegian pine. In Germany oak was employed; but the kind of wood was more a question of expense than anything else, except that some woods did not stand exposure to the wet so well as others. It had been noticed, that some kinds of wood, when kept always wet, lasted longer than the same wood exposed to alternations of wet and dry. The importance of sound timbering was very great indeed, and where it was of good quality, and not exposed to much change in temperature, wood had been known to last for a hundred and fifty years without apparent injury; but, generally speaking, it began to fail after forty or fifty years. The condition of the timbering was a vital question in estimating the value of old mining property. The quantity of timber used in mines was enormous. Sir Charles Lemon had estimated that the quantity now in the mines of Cornwall would require 140 square miles of Norwegian forest to supply it. That would give an idea of the great extent to which the timber was required.

The working of a mine depended partly upon the actual condition of the lode, partly on the value of the ore, and the vicinity of a market. Suppose the circumstances were favourable, and the ore found tolerably rich, it became then advisable to learn actually the nature of the "country," and while the mine was paying well, to run trial drifts and shafts in various directions. If this were not done, and the richer parts of the lode were worked out, without any trial drifts being made, it was almost certain that the proprietors would lack enterprise, patience, and capital, to carry out operations which must inevitably, for a time, be unproductive. Thus the mining engineer must always take care to carry on his trial operations simultaneously with those which were profitable; the cost of the former, then, being regarded as an item of regular expenditure, was not felt at prosperous times, and the advantage was felt in the continuance of a steady return. In the same way the adit level, which, when completed, sometimes cost 30,000*l.* or 40,000*l.*, must have this sum carried over a proper space of time; and thus, although the total expense might be very great indeed, it never appeared in that form, but went into the annual cost of working the mine.

It was very important, before sinking the shaft, to determine the underlie of the lodes likely to be most profitable; for if the shaft were to be sunk on the wrong side, the deeper it went down the further it would be from the point sought; but if it were on the other side, the lode must, sooner or later, be reached. There were also other important considerations for the mining engineer, as to the branches of the lode, which were all necessary to be considered in the commencement of works intended to be carried on on a large scale.

The methods of working underground were very like those used in quarrying and obtaining coal, consisting partly of hewing, and partly of blasting—the latter being usually resorted to in hard ground. With reference to this subject, it was right to mention, that some time ago gunpowder seemed likely to be superseded by the *gun-cotton* invented by Prof. Schönbein. It did not appear, however, to have been much used either in Cornwall or elsewhere, though it seemed to answer very well, as far as its explosive force was concerned, and it had the advantage of not producing the disagreeable and stifling gases which attended the use of gunpowder; but other products of its explosion were said to be mischievous. It did not, however, appear to have been put forward in a proper way as a question of trial, and gunpowder was generally used. The blast was generally fired mostly by an ingeniously contrived fuse, called the *safety fuse*, though, in some parts, the dangerous practice of firing, by means of a train, was yet in force. The method of blasting was, however, a part of the subject on which he could not now enter.

In getting the ore there was always a considerable quantity of stuff of no value, and thus the miners in separating the gangue from the matrix divided it into three groups—one very valuable, a second moderately valuable, and the third of no value at all. The latter was, of course, not removed, and the expense of raising was very much reduced. The ore was conveyed by human labour to the bottom of the shaft, up which it was raised by a windlass, worked either by horses or men, or else by water or steam-power. In some places, the water brought up from the mine was connected with a water-wheel, by which the ore was raised. Formerly the ore was always conveyed up ladders by human beings to the top of the mine, and this was still done in South America, and in other places where convict and slave labour rendered the expense inconsiderable, or where the ore was very valuable. Mining operations in matters of this kind must be always governed much by the rate of wages, and also by the mechanical conveniences offered by each individual mine.

These were the principal facts with respect to general modes of working underground; but it was a subject upon which a great deal must always be left to practice, and which could, no doubt, be learned better by experience than by description. There were, however, several books worth consulting, some of which detailed the machinery used in various mines; others dwelt more on calculations concerning the probable results of operations to recover mineral veins; and these were of greater or less value, according to circumstances. Other works had been published, of considerable value, intended to assist the mining adventurer to arrive at some estimate of the value of mining property; but all these points must be considered with reference to the conditions of the spot where the property might be. The best book on mining machinery was, perhaps, one by Mr. Coombe, published two or three years ago, in Paris. These works, however, contained very few details concerning the subjects to which he (Prof. Ansted) had directed attention, being, in most cases, distinctly practical, rather than relating to the general principles of mining.

The following lecture, which contained a short account of the common methods of treating the ores after they were obtained, and a *resumé* of the whole subject, concluding this most important and most interesting course of lectures, will be given in the *Mining Journal*.

INSTITUTION OF CIVIL ENGINEERS.

APRIL 18.—JOSHUA FIELD, Esq. (President), in the chair.

The paper of the evening was a series of "Observations on the Resistances to Railway Trains at different velocities," by Mr. Daniel Gooch, of the Great Western Railway. For the purpose of performing the experiments, a dynamometer carriage was constructed at Swindon, in which all the results required were registered upon a large scale on the same roll of paper—thus exhibiting at one view, and in the same period of time, the tractive power exerted upon the train, and the force and direction of the wind; the registration of the results was made upon the paper at every sixteenth part of a mile, and the time was registered in correspondence with the distance traversed during every fifth part of a second. The dynamometer spring used was 7 ft. 6 in. long, and very carefully arranged. It was only necessary to count the number of seconds, or fractions of a second, in one or more of the distance divisions, and the speed was accurately ascertained. The force and direction of the wind was ascertained by a wind gauge, placed 5 ft. above the top of the carriage, with the connections brought down to pencils which indicated on the same sheet all the results. Indicator cards were also taken simultaneously from the steam cylinders, as frequently as was practicable, but not continuously, as it was a service of some danger—the experimenter being obliged to sit on the buffer beam of the engine, at a velocity of 60 miles per hour, and in that windy position to take off four sets of cards in three-quarters of a minute. The spot selected for performing the experiments was one mile of railway perfectly straight and level, and nearly on the surface of the ground, and in the plan the height of the trees, hedges, and every intervening object which could affect the influence of the wind, is clearly marked. The experimental train consisted of first and second-class carriages, each on six wheels, 4 ft. diameter, taken indiscriminately from the working stock, and loaded with iron, to represent a fair load of passengers, giving a gross weight for each of 10 tons. The experiments were tried with various weights and speeds up to 100 tons, and to 62 miles per hour; and the results were classified and arranged in a tabular form, with copious explanatory headings, so as to render reference to them exceedingly easy. The author first reviewed the deductions of Mr. Wyndham Harding's formula, which were given at the discussion at the institution in 1846, and gave his reasons for dissenting from the formula. He then examined critically several experiments recorded in the tables, stating candidly all the exceptions that could be taken to them; showing also, that although there was a difference of as much as 52 per cent. shown between the resistance as calculated by Mr. Harding's formula and the experiments made by Mr. Gooch, that difference might be accounted for by the methods employed by Mr. Harding, which were objected to, as calculated to produce erroneous results—viz.: allowing carriages to run down inclines by their own gravity, using wheels of 3 ft. diameter instead of 4 ft., having a much greater length of train for the wind to act upon, &c. He reviewed the great effect of a side wind against a train driving the flanches of the wheels against the rails; and argued that the length of a train of carriages was much more important than its weight.

The author did not offer any formula that should be applicable for calculating the resistance of all railway trains, but his tables gave examples of almost every case that could occur, and thence data could be supplied for those who wished to carry the investigation further, and make a formula for themselves. He arrived at the conclusion, that in practice the friction of the axle journals was not a constant quantity at all speeds, and thought that the number and diameter of the wheels in a train, in proportion to the weight, should form elements in any general formula. He showed, by experiments, that the total atmospheric resistance to a train weighing 50 tons, differed but slightly from that to a train of 100 tons weight—if the carriages were small and the train long in the one case, and the reverse in the other case. The general result of the diagram of resistance with trains of 100 tons, and with 50 tons, showed that the resistance calculated by the narrow gauge formula with a 50 ton train, at 62½ miles per hour, was 37 lbs. With a train of 100 tons, by the same formula, at 61 miles, it was 31½ lbs. The broad gauge resistance, with a train weighing 50 tons, at 62½ miles per hour, was under 23 lbs.; and with a train weighing 100 tons, at 61½ miles per hour, was 29½ lbs. We cannot, of course, give fully the results, except in a comprehensive form, but such were the general results.

The author then concluded his paper, by saying that it appeared to him necessary, before any general formula for calculating the resistances to railway trains could be made, that the value of the following elements, necessary in such formula, should be determined by experiments:—1. The axle journal friction, at different velocities, and with different weights, per square inch of journal surface.—2. The resistance to the rotation of the wheels and axles, per pair, at different velocities, and with different diameters.—3. The resistance due to the rolling of the wheels upon the rails, with different weights upon them, and with different diameters.—4. The resistance due to the passage of the train through the atmosphere, at different velocities, with different proportions of weight, and length and breadth of train.—5. The resistance due to the oscillation, or unsteady motion, of the trains, at various speeds. The author considers that all these values might be determined, with a considerable degree of accuracy, by careful experiment.

It was announced that there would be no meeting on Tuesday, April 25 (being Easter Tuesday); and the meeting was, therefore, adjourned till Tuesday, May 2, when the monthly ballot for members would take place.

The Metallurgical Treatment of Ores.

[Continued from April 15.]—No. XV.

The works situated on the side of a mountain, consist of a shed capable of holding about a dozen hands. In the floor of this is dug a large circular hole, about 6 ft. deep, and 10 ft. in diameter. Ten negroes (females) are placed around this excavation, and employed in crushing ore. In front of each of them is placed a piece of porphyry, raised about two ft. above the floor, and inclined towards the reservoir. The muller, generally employed, is a piece of pyrites containing quartz. The mineral to be ground is placed near them, it is fragments of pyrites. These are placed upon the upper part of the porphyry stones and reduced to powder, water being added from time to time, and the pyrites, as it becomes reduced to the pulverulent state, runs off the stone, as a pasty substance, into the reservoir.

When the reservoir is filled with ground pyrites, a current of water is passed into it, which is allowed to run for about a week, taking care to stir the whole well together every now and then; the pyrites becoming free from earthy matters as the progress proceeds, the actual washing then commences. It is made in a wooden vessel, bearing the name *batea*, which has the shape of a very flattened cone, the base of which is about 15 or 16 in. in diameter, and its height from three to four inches. The blacks employed are exceedingly skilful in this washing. They place about 20 lbs. of the ground pyrites in the batea, and plunge it into water, in which they themselves are immersed half leg deep; then, after having well stirred up the pyrites with the hand, they give the batea a very rapid gyratory movement, taking care, at the same time, to give it different inclinations, so as to favour the escape of the matters suspended in the wash water. After this has been continued for some minutes, they take the batea from the water, and holding it in one hand, give it an inclination of about 45°, and with the other, turn out a large portion of the pyrites found on the inclined plane, formed by the position of the batea. The operation is continued in the same manner until a small quantity only of very rich pyrites is left. The attention is then redoubled, and, at last, very nearly pure gold obtained. When a certain quantity is thus made tolerably pure, it is returned to the batea, rewashed, and heated in a small iron spoon to dry it

After this, the pyrites carried away by the washing is submitted to a second and third treatment, similar to the first, and gold is constantly found. When it has undergone three washings, it is placed in the air, and left to itself in a heap for 8 or 10 months. At the end of this time it is bruised, and treated like new ore, and gives a quantity of gold, equal to that at first obtained by previous operations. The residual pyrites is again heaped and washed, and so on, until all the pyrites seems washed away. The water from these washings runs off, depositing very finely-divided pyrites, which is washed by free blacks, who find it still contains a considerable amount of gold. M. Bousingault endeavoured to ascertain the quantity of gold contained in a pyrites considered poor, but which, nevertheless, was worked profitably by the negroes, and found that it gave 1-5000ths of gold; but he thinks this quantity is below the reality, for if this ore was exposed to the air for some months, it yet yielded gold.

The various operations thus carried on at Marmato are founded on the difference of gravity between gold, which is 14 to 19 (as shown in the analyses in our last week's Journal), and pyrites, which is about five; it can, therefore, be conceived how readily the precious metal can be separated by washing. The exposure of the washed pyrites to the air is a very judicious process; a part of the mineral transforms to sulphate, which is carried off by rain-water. The principal action of the atmospheric air is exerted on the very finely-divided sulphates; for after many exposures to the air, the heap diminished much in size, and the residual pyrites is found in small cubical masses. It is in the interior of these fragments, which have resisted the crushing and washing, that the residue of the gold is found, and which can be removed, by treating the pyrites a second and a third time. M. Bousingault proposed to commence the treatment by a roasting, which would give a peroxide of iron, much easier to crush, and much lighter than the pyrites, and, consequently, would grind and wash more easily; and is assured, by many experiments, of the advantages of this process. The washing is executed with such facility, that by this method gold can be discovered in pyrites, which contain but a scarcely appreciable quantity. The greatest advantage the roasting of the pyrites affords is, that the auriferous oxide of iron resulting can be readily ground in a mill; and, when once ground, it is easy to extract the gold—for it mixes so completely in water, that it is sufficient, in order to conduct the washing, to let a stream of the fluid run on the oxide in a basin, and carefully agitate. Very soon the greater part of the oxide is removed, and the gold can be perceived in company with the body of crushed grains of oxide of iron. M. Bousingault has separated the gold from the matters in the above state by the aid of mercury; this is found to succeed very well, especially when the gold is in a very finely divided state. The roasting can be conducted either in a heap, as already described, or in an ordinary reverberatory furnace. In grinding the oxide of iron so produced, either a corn-mill, or the ordinary amalgamation mills, may be used; these have already been described in our series of papers on the treatment of silver ores. The ground oxide of iron can be washed in three or four large excavations, to separate the gold from the foreign matters contained in it; the operation can then be completed in a batea, or, better still, by amalgamation. A roasting of 5000 cwts. of the auriferous pyrites of Marmato yielded from 1 to 13 cwts. of gold.

[In our next week's Journal we shall conclude the treatment of gold ores.]

CHEMISTRY OF THE SEA.—A very interesting lecture was delivered on this subject at the Royal Institution, by Dr. Thomas Williams, of Swansea. In commencing, the lecturer demonstrated, by means of an apparatus contrived for the purpose, the effects of pressure on fishes at definite depths beneath the surface of the sea. Having shown that a gold fish, when the water in which it was placed was subjected to a pressure of four atmospheres, became paralyzed, Dr. Williams stated the following conclusions as deduced from his own experiments:—1. That round fishes, having an air bladder, cannot, without injury, be exposed to a pressure of more than three atmospheres.—2. That the use of the air bladder is not so much to regulate the specific gravity of the animals as to resist the varying force of fluid column, and thus to protect the viscera and abdominal blood-vessels against excess of pressure.—3. (Though in this case the results are less striking) flat fish exhibit a limited capacity only for sustaining pressure. From these observations, Dr. Williams inferred that the condition of pressure regulated the distribution of fishes in depth. Referring to the experimental researches of Prof. E. Forbes, he expressed his conviction that pressure would be found the most important element in the problem of submarine organic life. He observed that the lower animals evinced a tolerance of pressure peculiar to each species, and determining its zone of depth. The laws of oceanic temperature were next explained. It was experimentally demonstrated, that the expansion of sea-water is considerably greater than that of pure water, under equal increments of heat. It was, however, established by the acrometer, that density did not diminish in exact proportion with the increase of volume. It was argued, that this experiment went to account for the expansion of crystals by heat, as noticed by Mitscherlich; and that it also proved that in the case of two strata of water of dissimilar temperature overlying each other in the ocean, the tendency to intermixture by vertical molecular attraction was greater than would be the case if the sea consisted of distilled water. It was contended that it was in accordance with the principles developed in this experiment, that the warm water occupying the greatest depths in the sea (as discovered by Sir James Ross) rose to the surface and escaped under the form of vapour, which by diffusing warmth through the atmosphere mitigated the rigour of polar cold. Referring to the stratum of water of uniform warmth, observed by Sir J. Ross, the lecturer stated that he had ascertained, by experiment, that water acquires a considerable increase of temperature under great pressure, and that he thought that the temperature of the deep sea could only be satisfactorily accounted for by the condensation of bulk which the "air of water" underwent. The increase of temperature measured downwards from the stratum of uniform warmth to the sea bottom was noticed as proving that the latent heat of the dissolved air was rendered sensible as the pressure—*i. e.*: the depth increased. Dr. Williams concluded by referring to the maximum density of water, the laws governing the solution of air in water, and by explaining the influence of those conditions on the existence and distribution of plants and animals in the sea.

AGRICULTURAL CHEMISTRY.—In every department of the arts, chemistry has, within the last half century, effected a wondrous change—even the farmer, plodding on for centuries in the steps of his predecessors, has at length acknowledged the importance of chemical knowledge, in investigating the qualities of the soil, correcting its impurities, and rendering it suitable for the growth of any particular grain, fruit, flower, or vegetable. As a piece of interesting and useful general information, we give the following easy mode of ascertaining the components of soils, from Mr. Young's letters of Agricola:—"In the field to be examined, take earth a little below the surface, from four separate places, about ½ lb. from each; mix them together, and again separate them into four quantities of ½ lb. each. Then take one quantity, and expose it to the sun, or before the fire, till completely dry; and turn it over frequently, that it may be well mixed together. Being thus powdered, pass it through a fine sieve, which will allow all the particles of sand and gravel to escape, but which will hold back stones, small fibrous roots, and decayed wood. Weigh the two parts—the fine and the rough—separately, and take a note of each. The stones and other bulky materials are then to be examined apart from the roots and wood. If they are hard and rough to the touch, and scratch glass easily, they are silicious and flinty; if they are without much difficulty broken to pieces by the fingers, and can be scraped by a knife to powder, they are aluminous or clayey; or if, when put in a wine-glass, and common vinegar poured upon them, small air-bubbles ascend to the top of the liquid, they are calcareous. The finely-divided matter which ran through the sieve must next undergo the test of experiment. After being weighed, agitate the whole in water, till the earth be taken up from the bottom and mechanically suspended, adding water till this effect be produced. Allow the mass, then, to settle for two or three minutes, and in that time the sandy particles will sink to the bottom. Pour off the water, which will then contain the clay in suspension, and the insoluble earth arising from animal and vegetable decomposition. The sand should be first attended to, and if, from inspection, it be thought either silicious or calcareous in its nature, the requisite tests may be instantly applied. By this time the mixture in the poured-off water will leave deposited at the bottom of the vessel the clay and other earths, with the insoluble animal and vegetable matter. After pouring off the water, dry the sediment, and apply a strong heat, by placing it on the bottom of a pot ignited to redness, and the animal and vegetable matter will fly off in æriform products. The remainder lying in the bottom will be found to consist of clay, lime, or magnesia. To obtain accuracy, another ½ lb. may be taken, and the whole process gone over a second, a third, or even a fourth time, so that the operator may rectify any blunders he had previously committed, and be satisfied as to the results of the experiment. He should provide himself with a pair of fine scales, and a set of weights, divided, at least, into half or quarter ounces and drachms. Although vinegar will detect lime by effervescence, it does not dissolve it so effectually as the nitric or muriatic acids, small quantities of which may be obtained from the druggists at a small expense. Having ascertained by these, or any other inquiries, what is the composition of the soil, a pretty accurate notion, other things considered, may be obtained respecting its capacity for productive husbandry. If it be necessary to enter on a course of improvement, the defect in composition may be remedied, by the application of materials of an opposite quality—an excess of calcareous matter being counteracted by sand and clay—an excess of clay, by the admixture of sand—or an excess of sand, by the application of clay, peat, &c. An excellent soil for bearing wheat has been found to contain in 100 parts—carbonate of lime, 28; silica, 32; alumina, 29; and of animal and vegetable matter, with moisture, 11. Oxide of iron, to the extent of 2 or 3 per cent., is not unusual in productive soils."

QUERCITRON BARK.—The Lords of the Committee of Privy Council for Trade, having had under their consideration an application from an individual, on the part of the cotton manufacturers of Manchester, requesting that certain preparations of quercitron bark, applicable to processes in dyeing and cotton printing, may be admitted free of duty, the bark itself in its rough state, being already free, the Commissioners of the Customs have received a communication from Mr. Parker, one of the secretaries to the Lords Commissioners of her Majesty's Treasury, stating that he has received directions from their lordships to authorise the board to extend the privilege of admission to entry free of duty, now given to "bark, and to extract of bark, or other vegetable substances, used only for tanning leather," to the like substances when used for other purposes.

A "Miners' Friend," dating Bonsall, April 12th, writing to the *Derby Reporter*, says—"The great number of accidents which have occurred in the tunnels and other works belonging to the railway now making through Matlock Bath and the neighbourhood, induce me to trouble you with this communication, hoping that the attention of the public may be called to inquire more particularly than is generally done by the jury at the coroner's inquest, whether such accidents might not, by caution, be avoided, and so many families prevented from being deprived of the means of living and maintaining that respectable condition in which the miners here generally live. Last week but one, you reported a case where three men were injured by the firing of a blast unexpectedly upon them—one of whom was killed. Since then, you will have heard of another similar accident, where one man has been killed and another seriously injured. Now, the former of these accidents was in the 'cherty' limestone; and the other in the 'trap-rock,' or 'toadstone'—in both of which rocks the use of iron skewers in blasting is most dangerous, and ought never to be used. Some of your readers may not be aware that these skewers are used whilst ramming the hole, after the powder has been placed therein, and drawn up by the side at intervals, so as to leave a space for the insertion of the straw used to ignite the powder. The friction of this has caused, in several accidents, an explosion whilst the men were close to the blast. It is not generally understood that this ramming of the powder is unnecessary, and an equally effective blast would be obtained by merely pressing gently a little paper at first, and a handful of dry sand at the top; but should the faith of the miner in this be weak, and also the difficulty of being able to accomplish it in all positions, I consider it a duty the company owe to the public and their workmen to see that copper skewers, or what would be far cheaper and more effectual, the 'safety-fuse,' should be used in future in such dangerous rocks."

MINING COMPANY OF IRELAND.—A special meeting was held at the office Ormond Quay, last week, when Mr. James Gray was elected a director for the remainder of the year, in the room of Mr. Thomas Mooney, resigned.

GRAND SURREY CANAL AND DOCK COMPANY.—A meeting of this company was held at their offices, White Lion Court, Cornhill, on Tuesday, the 18th inst.,—ISAAC SOLLY, Esq., in the chair. A somewhat voluminous report of the proceedings of the company was laid before the meeting; from which it appeared that the trade of the canal had increased considerably during the past year. A dividend of 2*l.* per share, out of the profits of the past year, was agreed to—the directors reporting that the great improvement in the income of the year would permit of that division; and that, after meeting the expenditure of 2625*l.*, for works now in progress, and setting apart 1000*l.* for a building fund, there would yet be a balance of profit towards the next year of 2600*l.*

DRAINAGE OF RAILWAY SLOPES.—At a meeting of the Highland and Agricultural Society of Scotland, as reported in the *Scottish Railway Gazette*, there was a paper read by Mr. Stephens, an eminent authority, on the "Drainage of Railway Slopes." He commenced by observing—"That every one who had travelled along railways may have observed, that large masses of earth had slipped down the face of the deeper cuttings; and on inquiring into the particulars of such accidents, they will find them to have arisen from the action of water on retentive clay. A common method adopted by the railway people, in draining cuttings, is to form open channels, in a slanting direction, down the face of the cutting, in parallel lines, terminating in an open channel, which conveys the water to the drain by the side of the railroad. Another method consists of making drains with tiles under ground, from the spots at which the water is seen to issue to the above-mentioned drain. Notwithstanding these drains, land-slips still take place, and do not excite surprise, for such a mode of draining only attempts to struggle with the effects, and not with the cause, of the accidents. The water should be prevented doing any harm at all, and this is quite practicable. The ground, at the top of all railway cuttings, exists in one of three states—sloping to the top of the cutting, on a level with it, or inclining away from it. When rain falls on the sloping ground, it will either run down the face of the cutting, carrying away the replaced soil with it, or be absorbed by a porous stratum, by which it will be led to appear as a spout, or spring of water, near the top of the face of the cutting. In the former case, an open channel, formed a little way above the top of the cutting, will prevent the water running down the face of the cutting; and, in the latter case, an underground drain through the poorest stratum, will prevent the water going to the cutting. When the rain falls on level ground, it descends perpendicularly, and, on finding an inclined porous stratum, will appear at a lower level in the face of the cutting. The obvious remedy for this case, is to cut an underground drain into the porous stratum, and carry away the water where it can do no harm. On ground inclining away from the top of the cutting, the rain cannot affect the face further than what falls directly upon it; but on reaching level ground, and finding porous strata, it will find a way to the bottom of the cutting, where it may bring down, on a level with the railroad, a large mass of the superincumbent clay. Here, also, is the obvious remedy of making an underground drain into the porous matter, and carrying the water elsewhere. In regard to draining the ground on which embankments are formed, where there is a ditch or a rivulet, the conduit forms a very good outlet for any superfluous water that may have percolated through the porous material of which the embankment may be formed; but where there is no need of a conduit, the part of the ground occupied by the embankment should be furnished with well-formed drains, to carry the water quickly away to the adjacent ditches. In neglecting to provide such drains, large landslips from embankments have not unfrequently occurred after heavy rains, to repair the damage of which has occasioned much trouble and expense. These suggestions for draining railways appear simple and obvious to agricultural drainers; but is it not singular, that they seem never to have occurred to railway engineers?"

GREAT NORTHERN RAILWAY—OPENING OF THE LINE TO ASKERN.—Many of our readers, more particularly the inhabitants of Doncaster, have been long and anxiously looking forward to the time when a railway communication between this town and other parts of the kingdom should be opened; and we believe we may now assure them, without any fear of dissappointment, that one portion of the line of the Great Northern Railway will be ready for opening on the 1st of June—the time fixed, we are given to understand, for the opening of the Askern branch of the Wakefield, Pontefract, and Goole Railway. On Wednesday last, a deputation from the Lancashire and Yorkshire Railway (with which the Wakefield, Pontefract, and Goole Railway is now incorporated) had an interview with Mr. Denison. the chairman of the Great Northern Railway, for the purpose of ascertaining at what period the Great Northern line from Doncaster to Reedholme, near Askern, would be completed, The deputation were assured that the portion of the Great Northern from Stockbridge to Reedholme, would be ready for opening on the 1st of June, and that the remaining portion from Stockbridge to Doncaster would be ready in Sept. next. After the interview, the deputation walked over the line from Doncaster, and, we believe, expressed themselves satisfied with the result of their visit.

SPEED AND POWER OF THE LOCOMOTIVE.—We have recently availed ourselves of opportunities of testing the running of two classes of broad-gauge engines, with ordinary passenger trains. The working of locomotives with these trains is a much better indication of speed and power, and of the accommodation afforded to the public, than anything that can be gathered from a thousand experimental trips. The engine by which we went down from Paddington to Swindon, on one day, was the *Elk*—one of a broad-gauge class of engines, having 7-ft. driving-wheels, 16-in. cylinders, and 24-in. stroke. They are somewhat heavier than the class to which belongs the *Ixion*, so celebrated for her performances in the experiments instituted under the superintendence of the gauge commissioners. It will be recollected, that the fastest recorded trip ever made with a passenger train was from Paddington to Didcot (53 miles). It was given by the *Mining Journal* of the 1st inst. The train taken was 50 tons weight, and the time 51 min. 38 sec. The engine employed was the *Lightning*, one of the 8-wheel engines, with 8-ft. driving-wheels, 18-in. cylinders, and 24-in. stroke. On another day the lighter engine, the *Elk*, driven by T. Simpson, a very careful and experienced man, left Paddington at 10·50·30, with the usual morning express, weighing 50 tons, and reached Didcot at 11·45·25, performing the 53 miles, therefore—from a state of rest to a state of rest—in 54 min. 55 sec.; very excellent work indeed for this class of engine. Again, on another day, we went down by the 12 o'clock train. The trip was an extraordinary one. The train consisted of six carriages, two luggage-vans, two carriage-trucks, and one horse-box—together about 95 tons. The engine employed was the *Bright Star*, with 7-ft. driving-wheels, 16-in. cylinder, and 18-in. stroke. She is a lighter engine than the *Elk*, and was built by the Messrs. Stephenson. Her original consumption of coke was between 40 and 50 lbs. per mile, but she has been almost completely altered in her proportions. Her boiler has been lengthened, different cylinders put into her, the fire-box enlarged, the lap of the valve altered—in fact she has been made quite another engine at Swindon, and her consumption of coke now averages from 28 to 32 lbs. per mile. With a train of 95 tons, the *Bright Star*, driven by R. Patterson, one of the oldest and best drivers on the line, left Paddington at 12·3·10, and passed West Drayton (13 miles) at 12·20·27, having, therefore, got into speed with this heavy train, and run the 13 miles, in 17 min. 17 sec. At the West Drayton station the caution signal was on, and the same signal was given by the policemen along the line till we came in sight of the Langley Marsh station (16 miles), where the red or danger signal was against the driver. As we approached the station the third-class down train was seen about half a mile a-head. This we followed at a reduced rate of speed, and arrived at Slough at 12·28·47. The 18 miles were, therefore, gone over in 25 min. 37 sec., although we were kept back at a snail's pace for the couple of miles between Langley Marsh and Slough. The 13 miles from Slough to Twyford were—from station to station—performed in 17 min. 25 sec. With six stoppages, the train reached Swindon at 2·19·20, so that the 77 miles were performed in 2 h. 16 min. 30 sec. The time lost while the train was at a state of rest at the six stations —Slough, Twyford, Reading, Goring, Farringdon-road, and Didcot—was 24 min. 48 sec. The average speed, including all the stoppages, was 34 miles per hour. We believe there are not to be found on the narrow-gauge lines any two engines that would together equal this performance of the *Bright Star*. We are looking anxiously for a trip with the four 7-ft. wheel narrow-gauge engine, built by Messrs. Wilson, of Leeds. We perceive in one of the railway papers that her asserted rate of 74 or 75 miles per hour is stated to have been attained with three carriages only. We doubt that she ever maintained even 64 or 65 miles per hour, without any carriage attached to her. If she has, as is asserted by what ought to be considered competent authority, maintained 75 miles per hour with six carriages, or 30 tons, she can take 12 carriages at a high velocity. If they are not joking about this new engine, the best interests of the narrow gauge require that her speed and power should be tested forthwith.—*Herald.*

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—Capt. Thomas Angove (April 14) reports—We have holed the adit end to the old workings at Nangle's, and let off the water; the adit level is 2 fms. deeper than the deepest part of those workings, which leaves a stope of 3 fms. in bottom of level, to work on tribute; from the point we communicated so far east as Nangle's shaft (which is about 12 fms.), the back and bottom of the level is looking well, producing over ½ ton per fm. The pitches in the old mine are producing about the same quantity of ore. The Slob shaft is down 10 fms., and the men have commenced to drive south. We shall commence to drive a cross-cut south, from bottom of eastern flat-rod shaft, by the end of April. To enable us to work the ground the adit end is driven through. We shall increase our raisings this month. We have a small cargo of lead at present ready for shipment.

BEDFORD UNITED.—Capt. Thomas Ellery (April 19) reports—At Wheal Marquis, the engine-shaft will be down to the 90 fm. level in the course of a few days; there has been no lode taken down in the 90 fm. level east since last report; the rise in this level is suspended, and the men are put to sink a winze under the 80 fm. level, in which the lode is from 2 ft. to 3 ft. wide, producing good saving work; the lode in the stopes, in the back of this level, is 2 feet wide, and worth 45*l.* per fm.; the lode in the 90 fm. level west is at present small and unproductive. There has been no lode taken down in the 80 fathom level east. We are still driving by the side of the lode in the 70 fm. level east, the capel thereof being very hard. There has been no lode taken down in the 47 fm. level east. At Wheal Tavistock, the lode in the 67 fm. level west is 18 in. wide, producing good stones of ore—a very promising lode. In the 25 fm. level, east of the south engine-shaft, the lode is 18 in. wide, producing stones of ore; and in the adit level east, on this lode, the lode is 20 in. wide, producing stones of tin, and spots of ore in places.

COATLITHE HILLS.—Capt. J. M. Paull (April 15) reports—The prospects of the vein are improved since I last wrote. Thinking the vein (spoken of in my last) was only a string branching off from the vein, we drove a little northward, and discovered the principal part of it, and from its appearance it is likely to turn out productive. We have cut about two feet into the vein, and have got out some good stones of lead ore, but have not yet cut the other wall (plate); so I expect, when we sink deeper into the hazle, and have both walls of it, there will be a good vein. The string spoken of above is likely to join the present vein a few fms. further eastward, which, it is very probable, will be greatly improved by it, both in width and produce. From this you will perceive there has been an alteration for the better; I shall be able to send further particulars next week.

COMBLAWN.—Captain James Hosking (April 17) reports—The ground in the cross-cut in the 20 fm. level is much easier for driving than it has hitherto been. During the past week we have intersected several small branches, containing carbonate of lime, iron pyrites, and spots of lead; from these indications, we expect that the lode is not far distant, and that, by the end of this week, we shall be able to give you all particulars relative to this important part of the mine.

CWM ERFIN.—Captain Samuel Nicholls (April 15) reports—The men are getting on in sinking the shaft. I think it will be of no advantage to increase their number for this month, as the shaft is but 10 ft. below the level; in another month, as they get deeper, we can put three labourers with them. The lode in the shaft contains some spots of ore, but not worth saving at present. In driving the 10 fm. level east, four men are as many as we can keep the stuff from at present; they have done but very little this week on account of clearing their stuff. The stopes stand just as last reported, for there has been scarcely any lode taken down, the men having been very busy clearing their old stuff. I have now put three men to wheel the stuff and fill the kibble, so as not to hinder the miners in clearing their stuff.

DEVON AND COURTENAY CONSOLS.—Capt. H. Seccombe (April 18) reports—In driving our 40 fm. level south, on the cross-course, we find it continues large, and the ground to the east and west of it impregnated with small branches and stones of copper ore and mundic, but we have not yet intersected any lode to the west of it. We have also set another level to drive north on this cross-course, to ascertain if there be any branches or lode yet to the north undiscovered. In our end, driving east on the south lode, the lode is 10 in. wide, producing some good stones of ore. The sumpmen are making very good progress in sinking the engine-shaft, the ground at present being favourable.

EAST BIRCH TOR TIN MINE (DARTMOOR).—Captain J. Browning (April 10) reports—We have opened and secured 3 of the south adit shafts, and also cleared and secured the south cross-cut adit level 84 fms. We have also cleared and repaired the adit level, east and west, 90 fms. on the south lode. We have opened a cut, and brought in a lobby 12 ft. deep, which has unwatered the bob-pit near the engine-shaft; also the levels driven and brought in have unwatered the largest runs at grass; and our carpenter, with his assistants, have fixed all the connections to the engine—it is now complete. As soon as the north levels are all opened and repaired, on the course of the north lodes, we shall be able to set the pitches on a moderate tribute. I have this day set two pitches on the south lode. We can all see, from experience, that this mine is worthy of a good trial. We are now working in one part of the mine on tribute; and from the increase, both of quantity and richness of the ore, in the present level, it is most encouraging to all concerned.

EAST CROWNDALE.—Capt. S. Paull (April 15) reports—The sumpmen have commenced driving in the 58 fm. level both north and south; the ground, in the north end, is a close killas, intermixed with small branches of spar; in the south end it is much more favourable—the killas being better to drive in, and not so much mixed with spar. The 47 fathom level, driving west on the course of the north lode, is improving; it is about 14 in. wide, composed of capel, spar, peach, killas, and good stones of ore; the rise and stopes, in the back of this level, are looking better than I have seen them since we commenced; the lode is about the same size and composition as when last reported upon; the winze, sinking below the 47 fm. level east, does not look quite so good as it did—it being rather deranged by a floor of killas; we have raised, by four men, from the 47 fm. level, 4 tons of excellent ore in the past week; the engine-shaft, sinking at Rix Hill, is very much improved since my last report; the lode is increased in size, in the past week, from 2 to 4½ ft. wide, and produces excellent work for tin. I expect, before the end of another week, to report a regular course of tin in this place. The masons are at present engaged in building the stack for the engine-house.

EXMOOR WHEAL ELIZA.—Capt. Whiteford (April 20) reports—Nothing can be of greater importance to men of capital and enterprise in the mining world, than to be directed to a spot where there is a combination of indications, the most enchanting in their character and almost certain in their results, such are the undisputed appearances of the above mine. On my visit yesterday, I found the south lode, in the 12 fm. level west, about 2 ft. wide, composed of gossan, quartz, mundic, and the most splendid specimens of carbonate, arseniate, and sulphuret of copper, but there is but little saving work from this end as yet. The winze in the bottom of the adit, on the north lode, down about 6 ft., set at 2*l.* 5s. per fm.; and, being designed for a shaft, it is to be carried 8 ft. long and 5 ft. wide. The lode here is from 6 to 7 ft. wide; its component parts are gossan, prian, mundic, and oxides of copper. Here I can, with unflinching confidence, assert after 30 years' experience, that a lode more worthy of trial never came under my observation; I, therefore, feel it my duty to call the attention of the respective shareholders again to this very important lode, which, with the present facilities for working, is rarely met with, and will, doubtless, shortly and amply remunerate them for their anxiety, patience, and outlay.

GREAT WHEAL MICHELL.—Capt. T. Richards (April 19) reports—There is no material alteration in the sump winze, the part of the lode now being carried for about 5 ft., contains mundic ore, fluor, capel, and spar, and is, in its general character throughout, very promising. In the 35 fm. level, west of the sump winze, the lode consists of mundic, spar, and ore, producing some saving work, and opening tribute ground.

HERODSFOOT.—Capt. Robert Dunstan (April 12) states—In reporting on the above mine, it is not necessary that I should enter into a lengthened detail of the locality and geological features of the mine and neighbourhood, presuming that you are already well acquainted with both—therefore, suffice it to say on this head, that the stratum in which the lode is found is that kind of grauwacke, or killas, generally proved to be congenial for lead; and, being moderately soft, particularly so in the south part, it affords great facility for laying open the mine, the operations and appearances of which I describe as follows:—The engine-shaft is sunk 5 fms. below the 94 fm. level; the ground in the shaft is every way favourable; it is sinking on a moderate underlie, at a little distance from the lode. In the 94 fm. level the lode is intersected, by cross-cutting about 5 fms. from the shaft; the point at which it was first cut in this level is small and poor, but in driving a few fathoms south a very promising lode is just cut into, and may be expected (from the lead gone down in the level above) soon to yield good quantities of lead; the north end is driven about 4 fms., the lode continues small and poor; four men are employed in each of these ends—ground moderate. The 82 fm. level is extended north 42 fms.; the lode in this end is 2 ft. wide, producing ¾ ton of lead per fm.; this end will more than pay for driving, and is opening good backs for tribute; the 82 fathom level south is extended 48 fms.; the lode in the present end is 2 ft. 6 in. wide, producing 1 ton of lead per fm.; there is a good lode gone down in the bottom of this level all the way it has been driven; two pitches are being worked in the back, at 40s. per ton, each yielding at present 10 tons per month, four men being employed in each pitch; 100 fms. still remain to be wrought in these pitches; there are 150 fms. of reserved ground standing southward in the back of this level, the present appearances of which promise 1 ton per fm. The 72 fm. level is extended north 50 fathoms; the lode in this end is 18 in. wide, yielding 1¼ ton per fm.—ground in the end rather hard, but it will more than pay for driving, and open good tribute backs; three pitches working in the backs, four men in each; reserved ground in the back 100 fms.; the 72 fm. level south is driven 62 fms.; the lode in the end is split in two parts, the east part is 2 ft. wide—good lode; but the end is driving on the western part, it being the softest ground, though the branch is small and poor; two pitches employing four men in each are being worked in this back, and yield about 17 tons of lead per month; reserved ground 10 fms. long, whole to the 52 fm. level—that is, 200 fms. of ground unwrought. The 60 end south is suspended; one good pitch in the back wrought at 70s. per ton; from 40 to 50 fms. of good ore ground remain to be taken away in this pitch; the 60 north is extended 47 fms., the lode in the end is 18 in. wide, producing ¾ ton per fm.; ground standing in the back 25 fms. high, yet unexplored, except a rise, which is gone up 5 fathoms, by way of proving, before set on tribute. The mine is well cleared of stuff, and every one apparently profitably employed, the whole of the operations being conducted in a practical miner-like manner. On the whole, the mine looks well, and bids fair for keeping the present returns—70 tons per month—and paying a profit of 150*l.* per month above the present cost. It was suggested to me, that I should pay particular attention to the sump-shaft, in order to give my opinion on the propriety of discontinuing it; and I beg to say, on this question, that I see no reason whatever to discontinue it; as there is no impediment to its being sunk to the 106 fm. level, where it will be necessary to change the two drawing lifts into a plunger lift; and, as this will take some little time in doing, it should be done while the new steam-whim is erecting, that you may be prepared to lay open more ground, and thereby meet the increased facility for drawing stuff; and it is my firm conviction, that by so doing, you will increase your returns. In conclusion, I would remark, that the needful supervision of such a range of workings requires the assistance of a second captain.

HOLMBUSH.—Capt. William Lean (April 18) reports—We shall be in a condition to commence sinking the diagonal shaft in the course of a few days. The lode in the 120 fm. level south is 4 ft. wide, composed of spar and lead, worth 10*l.* per fm.; the lode in the north end, in this level, is 5 ft. wide, composed of flookan, spar, and stones of lead. The lode in the 110 fm. level south is 4 ft. wide, composed of quartz and lead, worth 5*l.* per fm.; the lode in the stopes, in the back of this level, is 4½ ft. wide, composed of quartz and lead, worth 5*l.* per fm. The lode in the 100 fm. level south is 2 ft. wide, composed of soft spar and lead, saving work; the lode in the rise, in the back of this level, is 2½ ft. wide, producing stones of rich silver-lead ore; the lode in the winze, in the bottom of this level, is 3 ft. wide, composed of spar and lead worth 15*l.* per fm.; the Flap-jack lode, in the 100 fm. level east, is 3 ft. wide, composed of mundic, spar, and spots of copper ore, making two good walls, with a moderate underlay north, since we have got clear of the lead course. The lode in the 90 fm. level south is 20 in. wide, composed of spar, prian, flookan, and stones of lead, saving work. The tribute pitches are much the same as when last reported on.

KIRKCUDBRIGHTSHIRE.—Capt. J. Buzzo (April 15) reports—We are driving north in the 50 fm. level end west; the ground continues hard; we consider we have about 4 ft. further to drive to cut the north branch. The lode in the 40 fm. level end west is 4 ft. wide, producing stones of lead, with indications of an increase. The lode driving east on the caunter, in this level, is about 3 ft. wide, yielding stones of lead, not so productive as it has been since last report. The lode in the 30 fm. end east is become more settled, producing some jack, and spots of lead. The end driving west in this level is still productive, yielding about 1 ton per fm. The lode in Keith's shaft is 3½ ft. wide, producing ¾ ton per fm.

LEWIS.—Captain Samuel Noell (April 15) reports—The lode in the 70 fm. level, west of sump whim-shaft, is 15 in. wide, unproductive at present. The ground in the 70 south is favourable. The lode in the 60 east, on south branch, is small, and very much disordered, being near the cross-course; the lode in the 60 west, on south branch, is 2 ft. wide, worth 30*l.* per fm. The lode in the 50 east is 10 in. wide, worth 9*l.* per fm. The lode in the winze, sinking under the 40, on south branch, is 4 in. wide, worth 4*l.* per fm. The lode in the 20, east of Praed's shaft, is 2½ ft. wide, worth 3*l.* 10s. per fm. All other places much the same as when last reported.

MENDIP HILLS.—Capt. F. C. Harpur (April 17) reports—The lode in the 38 fm. level, south of shaft, assumes a more favourable appearance than I have seen it for some time past, being about 1 ft. 6 in. wide, composed of flookan, white spar, and small sprigs of lead, carrying two very regular walls; the ground is also become a little more favourable for driving than it has been of late. In the slag department, I am glad to say, we find a great improvement in the quality of the slag stuff taken to the dressing-floors during the latter part of the past week; and, from the appearance of the stuff at present lying open, which is 12 ft. thick, I am led to hope that a greater improvement will shortly take place.

SOUTH WHEAL TRELAWNY.—Capt. Wm. Jenkin (April 17) reports—Snell's engine-shaft is in course of sinking, with 9 men—ground favourable, strata light killas, with spots of copper ore, and a great deal of mundic.

TRELEIGH CONSOLIDATED.—Capt. William Symons (April 15) reports—The 120 cross-cut, north of Christoe's, is driving to cut the lode west of the slide. In the 100, east of Christoe's, the lode is 20 in. wide, much improved in appearance, with stones of ore. Garden's shaft, below the 100, is sinking in the country; in the 100, west of ditto, the lode is 3½ ft. wide, producing more ore than last, but not to value; in the 100, east of ditto, the lode is 2 ft. wide, very promising, with ore and mundic. In the 90, west of ditto, the lode is 20 in. wide, worth 8*l.* per fm. In the rise above the 80 west the lode is about 15 in. wide, producing a small quantity of ore. In the 70, west of ditto, the lode is 14 in. wide, worth about 2*l.* per fm. In the 60, west of ditto, the lode is 2 ft. wide, worth 6*l.* per fathom—this is disordered by a cross branch since Tuesday last; in the rise, above the 60, the lode is 18 in. wide, worth 2*l.* per fm. In the 50, west of ditto, the lode is 1 ft. wide, with stones of ore; the adit east, on Wheal Parent lode, is about 2 ft. wide, worth 4*l.* per fm.—this is orey, 2 ft. high from the bottom up; the adit cross-cut north, from engine-shaft, is to cut Wheal Orphan lode.

WEST WHEAL JEWEL.—Captain Richard Johns (April 17) reports—In the winze in the bottom of the 57 fm. level, west of Williams's cross-course, on Wheal Jewel lode, the lode is 18 in. wide, worth 6*l.* per fm. The rise in the back of the 70 fm. level, west of Williams's cross-course, on the same lode, the lode is 1 ft. wide, worth 5*l.* per fm. In the 70 fm. level, west of Williams's cross-course, on Wheal Jewel lode, the lode is 15 in. wide, worth 4*l.* per fm.; in the deep adit level, west of quarry shaft, on Tolcarne tin lode, the lode is 1 ft. wide, worth 5*l.* per fm.; in the deep adit, west of Hodge's cross-course, on Wheal Jewel lode, the lode is 15 in. wide, with good stones of ore—ground more favourable for driving. In the 30 cross-cut, south of Tolcarne tin lode, ground harder for driving. In the stopes in the back of the 12 fm. level, west of Quarry shaft on Tolcarne tin lode, the lode is 4 ft. wide, worth 25*l* per fm.

WEST WHEAL MARIA.—Capt. Thomas Rodda reports—The western engine-shaft is down below the 64 fm. level about 7 fms. 4 ft., the ground in which is a little more favourable for sinking than it has been for some time past. The south lode in the 34 fm. level, west of Vivian's shaft, is 2 ft. wide, with spots of ore in places.

WHEAL ADAMS.—Capt. J. Prince (April 18) reports—We have resumed clearing the new engine-shaft below the 50 fm. level, the timbers in which are thus far tolerably secure. The lode in the 50 fm. level south is small, containing a little ore, but its component parts are dissimilar to those in the level above: and it is, therefore, probable that the main part of the lode is standing on the west, where the ground is very heavy and exceedingly wet; we have commenced cutting in in that direction, and shall know the results by Friday next. Should we intersect the laminated hornstone on which the quartzose lode rests, the 40 fm. level would be drained in less than a week. We have nothing new in any other part of the mine.

WHEAL ANNA MARIA.—Capt. T. Moyle (April 18) reports—Since our commencement of this mine we have discovered, and laid open, ore of parallel lodes, running east and west, and also a caunter, running north-east and south-west in the River Teign—this lode crosses the east and west lodes in the river. The eight lodes are all within 80 fms. of ground, so that one engine-shaft would command the whole of them, by driving cross-cuts north and south from the engine-shaft. On No. 1 lode we have opened about 3 ft. deep by the side of the river—it is about 3 ft. wide; the composition of this lode is made up of mundic, peach, white iron, with good spots of yellow copper ore. The No. 2 lode is about 5 fms. south from No. 1—this lode has very much the same appearance as the No. 1 lode. The No. 3 lode is about 5 fms. south from No. 2—the lode is about 5 ft. wide; its component parts are a very fine rich-looking gossan, about 3 ft. deep from the surface; in this gossan we have had specimens of green sulphate and native copper, iron pyrites and antimony, cobalt with good stones of yellow ore. We have sunk on this lode about 11 ft. under the bed of the river; this lode is going down very nearly perpendicular; the walls have a beautiful rich light blue killas. The No. 4 lode is about 5 fms. to the south of No. 3, underlaying about 18 inches in a fathom north, towards the No. 3 lode—this No. 4 lode has the same component parts as the Nos. 1 and 2 lodes, with some good spots of yellow ore and cobalt in it. Our engine-shaft is between these two lodes (Nos. 3 and 4), which we expect will form a junction, according to the present underlay, about 2 fms. deep from the surface, where we think it may be safely calculated on raising immense quantities of copper ore on the lodes, forming a junction. The No. 5 and 6 lodes are about from 13 to 15 fms. to the south of the No. 4 lode—they have the same appearance as the No. 4 lode—that is, mundic, capel, peach, iron pyrites, with copper. The No. 7 lode is about 10 fms. south of the No. 6 lode—this lode is 24 ft. wide on the back, at the surface, with a very promising appearance; it is composed chiefly of peach, mundic, black jack, sulphuret of zinc, and impregnated throughout with the black oxide and yellow copper ore. The No. 8 lode is about 30 fms. to the south of No. 7—this lode, on the back, has a very fine gossan, about 5 ft. wide; this gossan runs about 6 ft. deep from the surface; then, under this, comes in mundic, peach, white iron, and some good stones of grey and yellow copper ore. On this lode we have sunk about 12 ft. under the bed of the river; we find it very much improved as we go down on it; it has a very kindly appearance for making a bunch of copper ore very near the surface. The No. 9 lode is the caunter; this can be seen in the River Teign for upwards of 40 fms. in length—this lode is about 3 ft. wide, its component parts are capel, peach, mundic, some fine silver-lead ore, and good stones of copper ore. This lode runs with an angle of 45° south-west and north east; and is about 20 fathoms to the east of our engine-shaft. There is also a north and south lode, or a cross-course, about 150 fms. to the east of our engine-shaft; it is these cross-courses that make all the best mines in Cornwall and Devon; all the good mines that are now making profits are very near the cross-courses. Our engine-shaft is now down about 7 fms. from the surface; we have had some good stones of copper ore crossing the shaft, from the south lode, falling into the north lode, which we think to be a very favourable indication for making a bunch of copper in a few fathoms sinking. Looking at the several indications, the geologists term favourable, we have every one of them here in this mine. The early discovery of iron pyrites, and portions of copper ore, mingled with large quantities of blende, is considered as a favourable omen for copper; blende, or black jack, as the miner says, rides a good horse—a phrase become proverbial from being often found to be above in a vein rich in copper beneath. Iron pyrites, at small depth, is also considered a favourable symptom for copper in depth, as it was in some of the best mines of Cornwall—Wheal Towan, North Bennar, Wheal Alford, Wheal Crimier, Wheal Virgin, and many others that can be named. We have, in this mine, elvan courses, crossing the lodes at the angle of 45°; we have also the granite, about 220 fms. to the south-west of us, in a very high hill. I have no doubt on my mind that, if this mine is worked with spirit, it will make

a first-rate mine, seeing that we have every indication of its making a good one. I am happy to inform you, that this is not only my opinion, but the opinion of some of the best mine agents in Devon and Cornwall, that have seen it—they all give it a good name, and think it will make a good mine.

WHEAL MARY ANN.—The mine agent (April 18) reports—The lode in the 40 fm. level, south of the boundary, is 2 ft. wide, and worth 4*l.* per fm. The lode in the 30 fm. level, south of Barratt's shaft, is 3 ft. wide, composed of gossan, can, quartz, and lead, worth 5*l.* per fm.; the stopes, in the back of this level, are producing a fair quantity of lead. The winze, sunk under the 15 fm. level, south of Barratt's shaft, was this day holed to the 30 fm. level, by which means we have a good piece more of orey ground laid open; the lode in the 30 fm. level, north and south of Pollard's shaft, is about 1½ ft. wide, very kindly, with some fine stones of lead. The lode in the 15 fm. level, south of Pollard's shaft, is 2 ft. wide, producing can, quartz, and some good stones of lead. Pollard's shaft is sunk 2 fms. under the 30 fm. level; here we have recently completed the pitwork to the 30 fm. level. We sold, on Wednesday last, 60 tons of lead ore to Messrs. Robt. Michell and Son, at 18*l.* 1s. per ton.

WHEAL TRELAWNY.—Capt. R. Bryant (April 18) reports—We have fixed the penthouse, &c., and commenced sinking Phillips's shaft under the 62 fm. level, where the ground is favourable, being a clear killas, composed of can, mundic, and lead, worth 7*l.* per fm.; the south end, in this level, is of similar value to my last report, worth about 11*l.* per fm. The ground in the 52 fm. level north is much improved, and the lode worth 9*l.* per fm.; in this level south the lode is worth 6*l.* per fm. The lode in the 42 north is 2 ft. wide, composed of can, spar, and lead, worth 5*l.* per fm. The 32 fm. level north, being near the boundary, is suspended for the present, in order to stope the back with greater facility, and hole a rise for ventilation. The stopes throughout the mine are looking tolerably well, and producing a fair quantity of ore. The ground in Trelawny's shaft, sinking under the 42, is, we find, more troublesome than for some time past, having lately met with floors of spar. The 22 cross-cut east is much as usual—in clear killas ground, and still in driving, by 11 men. At Vivian's, the 30 fm. level is driven about 50 fms. north; the lode in the end is large, and producing some very good silver-lead ore.

WHEAL TRESCOLL.—Mr. C. S. Richardson, purser, reports—Our mine looks exceedingly well; we have cut the B lode, No. 25; it is very rich work, producing 3000 lbs. of black tin to the 100 sacks of work; the mine will now pay its cost. There are several lodes that we could set tribute pitches on; but, as they vary so much in size and quality, at present we intend only driving by tutwork. The directors of the company having inspected the underground operations, and been advised by two celebrated mining agents, who were present, to continue the adit north another 50 fms., they have, therefore, given directions to put the same by public tender, as well as all other works on the mine—for particulars, *see* advertisement.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINES.—*Gongo, Feb.* 3.—The drought still continues, and the heat is so intolerable as to cause very serious fears regarding the growing crops of milho and fergas, some of which have already been injured. I have dispatched Sen. A. M. de Rocha to look at the productive districts; and if his reports are unfavourable, I believe it will be better to purchase off the old stocks, which are now cheap, than to risk scarcity and high prices for the new. I regret to add, that Gongo presents neither improvement nor change. At Bananal, Walker's shaft looks more favourable, and goes down well; our progress also with the deep adit level from that shaft is very good. The axle of the water-wheel is in its place, and some few other parts of it are being fixed. Our progress in all the other works is good; but as they were all mentioned in my last, I need not fatigue you with a second recapitulation. There are no Banaual gold returns on this occasion.

Feb. 12.—At Bananal, several trifling accidents to the machinery have prevented our regularly working in the 6 fm. level, at Thomas's shaft; still, however, a little has been done there. Towards Walker's shaft the rock remains as before, but as we have advanced in the opposite direction, it has become very hard, and we have been obliged to commence on a softer vein of stone, leading towards the original object. Our progress in sinking Walker's shaft is slow, but we have now but little fear of further trouble from the soft formation. The adit level, from the "great sink," towards Walker's shaft, proceeds well; and from the same shaft, towards the adit shaft, we are now advancing rapidly, having succeeded in penetrating the sandy formation. From the adit shaft, towards Walker's, our progress is regular and rapid; but in the opposite direction, as also in the level destined to meet it from the new wheal pit, the rock is hard, and our advance is consequently slow. The ring of Walker's wheel is in its place, and we shall commence fixing the buckets in two or three days; the ground is being leveled for the flat-rods, and the bob is in preparation. A second row of labourers' houses is in an advanced state, and the children's dormitory and work-room have been commenced. All our works advance rapidly and regularly, but we have not touched the gold vein since my last, and, therefore, have no return to report. The drought has ceased, and genial showers are now daily falling.

Gold returns from January 24 to 31	lb	4	10	14	0
„ February 1 to 12		5	11	10	0
				10	4	0
Total raised from 1st January	lb	18	4	16	0

[FROM A CORRESPONDENT.]

SILVER-LEAD MINES IN THE CANTON DU VALAIS IN SWITZERLAND.—We have been favoured with a sight of the report of a gentleman of mining knowledge and experience, who has just returned from visiting these mines, and also of samples of very fine silver-lead ores, broken by him on the spot. These mines are stated to be in full operation, worked by about 50 men, and have already at surface 1000 tons of ore, estimated at 16*l.* per ton—*i. e.*, 8*l.* for silver, and the like for lead—extracted from two levels driven in the same vein. Of the locality wherein these mines (or we might more properly call them deposits of mineral wealth) are situated, the following description of the visitor will, no doubt, be interesting to our readers:—"The mountain in which these lodes are situated, has an elevation of at least 7500 ft. from the plain, and the levels mentioned driven about 2400 ft. up the mountain. Below these levels, about 42 ft., a short level has been driven, with the same results as to silver-lead ore; and some workings have been opened on the summit, showing similar results. These last-mentioned workings being in the open air, are reserved for operations during the summer months; the lode is seen at the opposite side of the mountain, a distance of nearly three miles. These lodes are traced across the plain of that side of the mountain below the levels, and their existence in the mountain opposite, of nearly the same altitude, is a fact which I saw with my own eyes. There is water enough on the spot to stamp the ores with 1000-horse power, and may be brought to bear at an expense of 20*l.* Shoots can be constructed, to send the ores down to a considerable distance below, whence they can be conveyed to the valley by a wooden construction. The smelting-houses are to be constructed in the valley, in a spot I have visited, and which I think very convenient. Trees are on the spot, and can be had for 6d. each, and there is wood enough growing around for all smelting purposes for centuries. In the first of the levels I have mentioned, extended 966 ft., carried 6 ft. high, and about 4 ft. wide, we found silver-lead ores of the finest description, contained in a continuous vein, and large stones, rich in metal, are hourly breaking in the end. Parallel with this level, and about 13 yards distant from it, another level has been driven, to the extent of 42 yards, with the same height and width as the one first named. In this, also, the silver-lead ore was most beautiful and abundant, and exceedingly rich in metal. These two levels are on the *same lode*, thereby evidently showing, that the width between them is full of metal—a fact we exemplified, by breaking stones of ores on the right side of one level, and on the left of the other—indeed, *no walls* appear in either level, and the width of the vein remains undetermined. It is intended, at my suggestion, to cut from one of these levels to the other, as well for the sake of air, as for proof of continuance. The silver-lead ore already exhibited, and brought to surface, is placed immediately in front of the levels, and estimated at 600 tons, which quantity is daily increased by operations, which continue night and day. I found a very commodious building, with offices, storehouse, blacksmith's shop, dormitories for the agents and men, and conveniences, with a fair quantity of mining materials in the storehouse. The miners here, who are mostly Germans, seem active, intelligent, and well-behaved men—thoroughly understanding their business; and the manager is a man of superior abilities, having no equal in his knowledge of these mountains and their treasures, and most indefatigable and energetic. He is a good mineralogist and geologist; and none but a person of his indomitable courage could have penetrated to these secret recesses, where Nature carries on her operations on the grandest scale, even in the clouds. My visit to another mine, about 30 miles from these, similarly situated, was made some days afterwards. From this mine full 120 tons of nickel, equal to that analysed in London, were already taken; and immense quantities of that metal and cobalt are visible. There is a peculiar matrix in which these metallic substances are deposited—the nature of which, as indicative of their presence, was pointed out to me; of this mine, I must leave particulars till my next communication."

NEW LEAD MINE.—A vein of lead ore has been discovered at Itchington, near Thornbary, and preparations are making to work it. Specimens of the ore have been submitted to the examination of experienced miners, and no doubts are entertained of the speculation being a profitable one.—*Bristol Times.*

ACCIDENTS.

Dudley.—As a "doggy," named David Braddly, was sitting down in a pit belonging to the Old Dock Colliery (Messrs. Blackwells), giving instructions to some of the men near him, a quantity of coal fell from the workings above and killed him.

Cradley.—A lad named William Knight was dreadfully burnt by an explosion of inflammable gas, in a pit at Netherend, the property of Messrs. King, on the 21st of March—after lingering till Tuesday last, in dreadful sufferings, the unfortunate youth expired.

Wheal Maria.—A melancholy accident happened on Wednesday morning; three men were in a boat, and in crossing the River Tamar from the Latchley side, the chain broke by which they pulled themselves across, the boat swamped, and all the three men were immersed in the river. One poor fellow, called Richard Stain, was drowned.

Dudley.—R. Hyde, an engineer, at the colliery of Messrs. Blackwell, was drawn into the works of the engine and literally cut to pieces—his remains were obliged to be picked up and placed in a bag to be carried to the nearest public house.

Redditch—Cinderhill Stonepit.—W. Rowley, aged 13, was killed by a fall of earth.

Coppenfield Colliery.—J. Smith was killed here by 7 or 8 tons of coal falling on him.

Kingswinford.—E. Biggs was killed here by about 5 tons of roof falling on him.

KINZIGTHAL MINING ASSOCIATION.

The first annual meeting of shareholders in this association was held at the offices, Adelaide-place, London-bridge, on Thursday last, the 20th inst.

JOHN MASTERMAN, jun., Esq., in the chair.

Mr. GEORGE C. CAPPER (the secretary) read the advertisement convening the meeting, and the report of the directors, which stated, that immediately on the formation of the company, the shares were all appropriated, and the deposit duly paid—that the necessary documents and preliminaries having been completed, the concession for the district of the Kinzig Valley was granted from Prince Furstenburg, on the 25th April, 1847, by which they are invested with power to work 70 mines; and after being recognised by the Wurtemburg and Baden Governments, will have power to search for and explore lodes, and open and work fresh mines, in their respective territories. That the directors proceeded with due caution, and caused the whole country to be carefully explored, with a view to the commencement of the workings with five or six good mines. Their managing director (Mr. Machelen) was engaged in this work until the middle of July, when Professor Ansted, of King's College, was requested to inspect the property, who, in his first report, expressed himself very strongly as to the incalculable riches which the district contained. He stated, that in the Schapsbach Valley large quantities of copper and lead could be raised; in the Tiefenbach, silver, bismuth, and antimony; and in the Wittechen Valley, an immense quantity of silver, cobalt, bismuth, nickel, and other metals—that within the distance of two miles, there were five distinctly marked and highly developed lodes of the precious metals, all workable at once; and, with reasonable economy and prudence, would, in a very short period, repay the capital tenfold. The report proceeded to say, that they had given directions to suspend all explorations and works during the winter months, with the exception of the six mines—St. Michael, Herrenseegen, Frederic Christian, Wheal Maria, Wheal Capper, and South Sophia. That in the Wittechen district, some of the silver ore produced the enormous return of 5870 ozs. of silver to the ton of ore. That they had purchased the remaining interest in the Alpirsbach mines for 604*l.* 3s. 1d.; and shortly after the purchase, they came on a pocket of silver ore very rich, which being smelted with that which remained with the company, was included in the purchase-money for their interest. That, in consequence of the late outbreaks, they had reduced the number of mines in work to three; but these were all progressing, and highly promising as they proceeded in depth. The copper ore assayed on an average about 33 per cent.; and they had had consigned to them 7 cwts. 1 qr. 23 lbs. of rich silver ore, which had arrived in dock that morning.

The last letter from Mr. Ansted, who is again in the district, was read; which, after alluding to the state of the country, assures the directors that, as far as progress has been made, it was highly satisfactory; 60 men and boys were employed raising ores, and there was a good stock in hand of those of copper, lead, and silver.

From the statement of accounts, it appeared that the entire receipts from the commencement had been—Capital on calls, 10,000*l.*; profit on Exchequer Bills and interest, 247*l.* 4s. 6d. = 10,247*l.* 4s. 6d.—The expenses were 7152*l.* 7s. 7d.; leaving balance for working the mines, 3095*l.* 3s. 11d.

The CHAIRMAN, having apologised for the absence of two or three of the directors from unavoidable causes, observed, that this being their first meeting, and the directors wishing to put them in possession of everything they could, he would make a few observations—first, as to the character of the district; secondly, that of their staff; and thirdly, their financial position. From among so many metals, and such a number of mines, it was no easy task to choose; they had commenced with a capital of 10,000*l.*, which was small or large, according to the use they made of it. If they had launched out into extensive working, it would have been all frittered away; but, having picked out a few good ones, and husbanded their resources, to develope their worth, he hoped they would prove the germ of a wealthy and flourishing mining company. Mr. Ansted told them it was one of those extraordinary districts where you might go on working for months without success; but when a prize was hit upon, it would amply pay for the delay—so rich was the ore in silver. Some of the ore which had been raised was worth 7000*l.* per ton; and thus, if they hit upon a pocket of only 2 tons of good ore, their capital would be returned; for one small specimen which Mr. Ansted brought over, after his last inspection of the property, they had been offered the sum of 25*l.* The last report was highly encouraging; the silver was increasing in quantity in depth; and the last week's return of rich ore was 100 lbs. He considered Messrs. Machelen and Ansted a great acquisition to their staff, and they had in their employ a steady and active body of miners. With regard to their finances, they had upwards of 3000*l.* left, and ores in hand, which they could fairly estimate at 1000*l.*; their monthly expenditure was 200*l.*, and the copper already in sight was about 1700*l.* If they confined themselves to the silver ores, their expenditure would not exceed 100*l.* per month, and they might drop on a pocket, worth 10,000*l.*; but, even supposing they might be unproductive for six or nine months to come, they had ample funds to persevere, and ransack the whole district.

In answer to a question from Mr. Horne, the CHAIRMAN said there were about 20 tons of copper ore raised, and that it, and the lead ore, could be sold in the neighbourhood; but the silver ore was too valuable to trust them with, and they must assay and dispose of that in this country. The rent paid for the mines was 83*l.* 6s. 8d. per annum, and a royalty of 5 per cent. on actual profits.

The reports and accounts were received and adopted. Sir W. Magnay, Bart., was elected a director, in the room of Mr. S. J. Capper, deceased. Mr. Ashwell was also elected a director—Messrs. Wotton and Shepherd were elected auditors; and thanks having been voted to the chairman and directors, and also to the secretary, who severally replied, the meeting separated.

We are rather surprised that, throughout the report, or in the after conversation, not a word was said about the existence of gold in the ores; while, on examining the specimens which lay on the table, they were found to contain grains of gold visible to the naked eye; and, on using a magnifier, they are evidently studded with the precious metal. Are the directors aware of the real value of the extraordinary tract of country they have the privilege of mining in?

DARTMOOR CONSOLS MINING COMPANY.

An adjourned special general meeting of the shareholders, was held at the George and Vulture Tavern, on Monday, the 17th inst.

C. W. HOLMES, Esq., in the chair.

The CHAIRMAN, having briefly stated the object of the meeting, which was to confirm certain resolutions passed at a meeting held on the 3d inst., at Coggeshall, where the principal adventurers resided, called upon Mr. Mayhew to state the position the company was in, and the course proposed to be adopted.

Mr. MAYHEW stated, that the meeting, which had been adjourned, was with the view of affording explanation to the London adventurers, and to submit the balance-sheet, with the view of determining on the course to be taken to meet the liabilities of the company. On referring to the accounts, which were on the table, it appeared that the company was constituted of 2048 shares, and had been projected by Mr. Bartlett; that only 636 shares had been taken up—that several of the shareholders had not responded to the calls made—and further, that the debts, or liabilities, were about 650*l.* It was to meet these claims, and to put an end to further expenses and liabilities, that the meeting had been called. He should mention, that the purser had disposed of the materials on the mine for the sum of 145*l.* or thereabouts, which had been applied in part liquidation of the debts of the company. It was only necessary for those in default to come forward, and pay their relative proportions. There was no balance in hand; but, on the other side, the purser was in advance 23*l.*

Mr. CREET wished to make one or two remarks, as representing an absent shareholder, upon the statement submitted. He was given to understand, that certain shares, 1000 in number, were allotted in the first instance, free from any cost, but which had been since repudiated. He was informed, that certain of the present shareholders—naming Mr. Mayhew and Mr. Denny, as two—had agreed to take up the set and work it, upon the dissolution of the company. It did appear to him a job.

Mr. ENGLISH felt it his duty, in the absence of a gentleman who held upwards of 60 shares, or a tithe of the concern, to express his surprise that certain of the adventurers should with one hand dissolve the company, and, at the same moment, resuscitate it, by entering into a private agreement with the lessor; it appeared to him, at least, to require explanation. He, for one, considered, that if the mine be taken up by certain of the body, as directors, or other officers of the company, it was their duty to offer to their co-adventurers an interest co-equal with that now possessed by them.

A lengthened conversation, or discussion, ensued, in the course of which Mr. Mayhew and Mr. Denny expressed their readiness to waive any right they might be supposed to have acquired. Those gentlemen were anxious to see the mine worked; and, if others were not willing, they would, with friends, carry it out.—It appeared that the sum of 1000*l.* was to be paid for the sett; that 175*l.*, which had been paid in part, had become forfeited; and that the lessor had re-entered, but was willing to make a fresh grant, on the payment of 1000*l.* by four instalments.

The business of the day concluded by confirming the previous minutes, whereby the company may now be considered as defunct, while debts of some 600*l.* or 700*l.* are due. This affords another illustration of the Cost-book System, as practised without regard to principle.

COPPER MINING POPULATION OF DEVON AND CORNWALL.—From the best statistical returns which can be obtained on the subject, it appears that the number of persons actually employed in the copper mines of Cornwall and Devon is 21,780, who, together with their families, make up an aggregate of 61,000 persons. To these must be added the mechanists engaged in the formation and repairs of machinery, the supply of materials, the several tradesmen, farmers, &c., whose principal dependence is on the working of the copper mines, which may be fairly estimated at upwards of 50,000 more; we think, therefore, it may be assumed, that the population of the two counties immediately interested in, and in a very large majority dependent upon, the copper mines for support, cannot fall far short of 120,000 persons.

SOUTH WHEAL BETSEY MINING COMPANY.

A meeting of shareholders was held at the Buller's Arms, Marytavy, Devon, on Saturday, the 15th instant.

HENRY VATCHER, Esq., in the chair.

The purser having reported that all liabilities on the mine had been discharged, with the exception of 25*l.* 6s. 3d., the accounts and vouchers were ordered to be produced at the next meeting for examination and passing; also, that the adventurers' title to, and holding of, their shares, shall be subject to strict recognition of, and compliance with, the usual regulations of mining generally. For the proper and effectual prosecution of the concern a call was agreed to, to be paid on or before the 8th proximo. The proceedings of the meeting are to be forwarded to each adventurer, also the report of Capt. Spargo, as to the progress, prospects, and probabilities of the concern; and the present operations of driving the cross-cut level east, at the deep adit level, to cut the lead lode, were agreed to be continued. The company's agents reported the cross-cut drivage to have progressed towards the lead lode 2 fms. 3 ft., and that there is in the present end favourable ground for further satisfactory progress, 10 fms. having been set at 3*l.* per fm. An east and west lode has been cut south of this, large and of very promising character, exhibiting strong kindly gossan, with mundic, and peach, and other general characteristics correspondent with those of the lode in the adjoining celebrated (and, for more than 30 years past, exceedingly rich) mine of Wheal Friendship.

STRAY PARK AND CAMBORNE VEAN MINES.

A general meeting of shareholders was held at the mine, on Friday, the 14th inst. W. VAWDREY, Esq., in the chair.

The accounts for two months, ending February 29, were produced, showing—Balance in hand, November 1, 557*l.* 8s. 8d.; sale of copper ores, December 2, 1813*l.*; ditto, February 3, 2640*l.* 18s. 5d.; ditto tinstuff, 12*l.* 14s. 7d.—5024*l.* 1s. 8d. By tutwork cost, 1847*l.* 0s. 1d.; merchants' bills, 759*l.* 11s. 8d.; tribute pay on ores sold, December 2, and February 3, 500*l.* 7s. 11d.; subsist advanced on above ores, 750*l.* 12s. 10d.; dues payable on ditto, 329*l.* 11s. 1d.—leaving balance in favour of adventurers, 836*l.* 18s. 1d.

The accounts having been examined, were allowed; and the following report from Capts. R. Eustice and E. Ralph, was read to the meeting:—

In the 50 fm. level, driving west, the lode is 1 ft. wide, yielding 1 ton of ore per fm. In the 60 fm. level, driving west, the lode is small, producing stones of ore. In the 70 fm. level, driving west, the lode is small, and unproductive. In the 80 fm. level, driving west, the lode is 15 in. wide, yielding 2 tons of ore per fm. In the 90 fm. level, driving west, the lode is 18 in. wide, yielding 2 tons of ore per fm.; in this level, driving east, the lode is 18 in. wide, yielding 4 tons of ore per fm.; in the rise, above the back of the 90 fm. level, the lode is 3 ft. wide, yielding 4 tons of ore per fm. In the 100 fm. level, driving west, the lode is 2 ft. wide, yielding 3 tons of ore per fm. In the 110 fm. level, driving west, the lode is small and unproductive; in the winze, sinking below the 110 fm. level, the lode is 14 in. wide, yielding 1 ton of ore per fm. In the 120 fm. level, driving west, the lode is 18 in. wide, yielding 2 tons of ore per fm. In the 130 fm. level, driving west, the lode is 2 ft. wide, yielding 2 tons of ore per fm.; in the cross-cut, driving south in the 150 fm. level, the ground is a favourable piece—8*l.* 10s. per fm. In the 180 fm. level, driving west, the lode is 1 ft. wide, yielding 1 ton of ore per fm.; in the 180 fm. level, driving east, the lode is 1 ft. wide, yielding 1 ton of ore per fm. Since our last report we have holed the winze from the 90 to the 100 fm. level, and set pitches at 5*s.* in 1*l.* Our tribute ground is looking very well throughout the mine; and had it not been for the extremely low price of copper ore, the adventure would now be in a very profitable state of working. In Wheal Frances, the cross-cut driving south in the 56 fm. level will soon intersect the south lode, and being in elvan we are justified in anticipating the most favourable result. The erections at surface are nearly completed; and in the course of another month we shall be in a position to clear up the whole of the old workings, and extend our operations with spirit.

WEST WHEAL PROVIDENCE MINING COMPANY.

A meeting of adventurers was held at the offices, Lombard-street, on the 18th instant, when the accounts were produced, showing—By tin sold, 1127*l.* 11s. 4d.; copper ditto, 101*l.* (less dues 68*l.* 5s. 1d.); balance from end of July, 7*l.* 12s. 1d. = 1167*l.* 18s. 4d.—By wages from August, 1847, to Feb., 1848, 840*l.* 18s. 1d.; merchants' bills ditto, 171*l.* 5s. 7d. = 1012*l.* 3s. 8d.—Leaves balance of 155*l.* 14s. 8d.: deduct dividend of 12s. per share, 153*l.* 12s.—Balance now in hand, 2*l.* 2s. 8d.—The accounts were allowed, and a dividend of 12s. per share declared.

The following report from the mining captain was read to the meeting:—

West Wheal Providence, April 4.—We have sunk Michell's shaft from the 35 to the 40 fm. level, and extended the 40 fms. west from the boundary in good tin ground; but we have been unable to work this ground for nearly three months, on account of the water being dammed back from Wheal Tremayne. We have driven a cross-cut south in the 40 fm. level, and cut a promising lode on which we are driving east and west in ground that will set for about 7*s.* in 1*l.*; we have also driven a cross-cut north, and cut a lode, on which we are opening a tin ground that will set at about 10*s.* in 1*l.* At your last meeting, September 29, I fully expected that in three months Wheal Tremayne adventurers would have cut through the flookan in their 40 fm. level, and drained our mine 15 fms. deeper, when we could sink in our rich tin ground; this would have enabled me to have raised three times the quantity of tin sold in the same time (the past six months), and which I was so satisfied would be done, that I promised our purser I should do it; but the unprecedented wet season has prevented it; and, also, the Wheal Tremayne adventurers have found the ground in driving towards us much harder than they anticipated. The price of tin has also gone down, but I can assure you the mine looks as promising, and more so, than it did before.

WHEAL SETON MINING COMPANY.

The bi-monthly meeting of shareholders was held at the mine, on Tuesday, April 11th.—The following statement of accounts, having been examined, was allowed:—Jan. 6, by copper ores sold, 1582*l.* 15s. 4d.; Feb. 3, ditto, 3162*l.* 19s.; balance of last account, 1590*l.* 0s. 3d.—6335*l.* 14s. 7d.—To amount of costs for January, 1369*l.* 10s. 10d.; ditto February, 1113*l.* 4s.; merchants' bills, 709*l.* 14s. 8d.; overcharged on ores sold Dec. 2, 8s. 3d.; lord's dues (1-15th), 316*l.* 7s.; dividend of 20*l.* per 99th share, 1980*l.*: leaving balance in hand of 846*l.* 9s. 10d. A dividend of 20*l.* per share was declared; and the balance of 846*l.* 9s. 10d. was passed to the credit of the next account.—The following report, from the mining captains, was read to the meeting:—

Bull's shaft, sinking below the 90 fm. level, is down from 7 to 8 fms.—the ground is hard; the 90 fm. cross-cut north, from Bull's shaft, is extended 15 fms.—ground more favourable for driving; we expect to intersect the north caunter in about 3 fms. more driving. In the 80 fm. level west, on the south caunter, the lode is 3 ft. wide, containing stones of ore. In the 70 fm. level, west on ditto, the lode is 3 ft. wide, worth 15*l.* per fm. The stopes in the back of the 60 fm. level, west on ditto, are worth 35*l.* per fm. Since our last report, we have communicated the 50 cross-cut north to Tilly's shaft, which has much improved the air in the west, and are now driving east and west on the lode; in the 50 fm. level, west of Tilly's shaft, on the north caunter, the lode is 2½ ft. wide, with a leader of ore on the south wall, which will produce one ton of ore per fm.—the lode here is disordered by a slide; the 50 fm. level, east of the last-mentioned shaft, on the same lode, is 2½ ft. wide, producing about a ton of ore per fm.; this end is also disordered by the same slide. In the 80 fm. level west, on the north caunter, the lode is 12 ft. wide, worth 150*l.* per fm.; the stopes, in the back of this level, are worth 120*l.* per fathom. In the 70 fm. level, west on ditto, we are carrying about 4 ft. of the north part of the lode, which is worth 15*l.* per fm.; the stopes, in the back of this level, are worth 120*l.* per fathom. In the 60 fm. level, west on ditto, since our last report, we have cut in further south, and discovered a course of ore, worth 60*l.* per fm.; the stopes, back of this level, are worth 120*l.* per fm. The 50, west on ditto, is 5 ft. wide, composed of spar, mundic, and ore, and no south wall; the stopes, in the back of this level, are worth 30*l.* per fm. In the 80 fm. level east, on Knecbone's branch, the lode is 4 ft. wide, worth 25*l.* per fm. In the 70 fm. level west, on ditto, the lode is 18 in. wide, containing stones of ore. In the 60 fm. level, on the south caunter, we have discovered a new east and west branch, and opened on it about 3 fms. east, which is 2 ft. wide, and worth 25*l.* per fm. Tilly's shaft is sunk to the 60 fm. level, the sumpmen are now employed in driving north and south at the bottom of the shaft—ground favourable for driving. The 44 fm. level, west on Harvey's lode, is small and unproductive. Nothing has been done to Cock's shaft since our last report—the sumpmen having been employed in driving towards Harvey's shaft, for the purpose of communicating with the 44 fm. level. We are driving north from the bottom of Cock's shaft, to intersect a cross-course, which has been opened on several fathoms in the 13 fm. level, and which, when accomplished, will afford greater facilities for intersecting other lodes, which are at the north and south of the shaft. On the whole, the mine is improved since our last report, and particularly so in the 60 fathom level, on the north caunter; and our impression is, that this part of the lode has not been seen in the 70 fm. level.—PAUL RABEY: STEPHEN LEAN.

CORNISH STEAM-ENGINES.

The number of pumping-engines reported for the month of March is 28—the quantity of coals consumed being 3523 tons, lifting, in the aggregate, 33,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 54,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—The following have exceeded the average:—

Mines.	Engines.	Length of stroke	Load in pounds.	Load per sq. inch on plat.	Strokes per min.	Consump. of coal in bus.	Million lbs. lifted 1 foot by consump. of 1 bush. coal	Average quantity of water per min
Great Work ..	Leeds's 60-in.	9·0	47,020	12·9	10·5	2997	58·2	249
East W. Crofty	Trevenson's 80	10·33	85,026	12·6	4·9	2862	57·1	272
Carn Brea....	—— 76-inch	9·0	81,548	13·9	5·8	2411	67·9	
Ditto ..	Sims's 50&90 inch comb.	9·0	57,392	22·8	7·0	2118	66·5	668
United Mines	Taylor's 85-in.	11·0	97,108	15·5	7·4	4418	82·8	
Ditto	Cardoza's 90-in.	9·0	99,468	13·7	8·4	5974	56·2	
Ditto	Eldon's 30-inch	9·0	13,631	16·0	8·2	599	70·8	2295
Ditto	Loam's 85-inch	10·0	89,320	11·8	9·7	6106	54·0	
Ditto	Hocking's 85-in	10·0	99,093	14·6	8·8	6496	57·3	
Per. St. Geo.	Sims' 60&100 inch comb.	9·0	90,279	28·2	8·7	5080	61·2	1331
East Wh. Rose	Penrose's 70 in.	10·9	56,966	13·3	4·2	1734	63·5	696
Ditto	Michell's 70 in.	10·0	62,087	14·5	5·3	2100	71·5	
Wh. Mary Con.	—— 63-inch	8·66	29,057	9·3	6·6	1526	54·9	279

TRADE BETWEEN GREAT BRITAIN AND CHINA.—The number of ships which arrived in Hong-Kong during the year 1847 was 699—viz.: 43 from Great Britain, 147 from the British colonies, 16 from the United States, and 193 from foreign states. The total tonnage amounted to 229,465. The value of the imports into Hong-Kong, in Chinese vessels, during 1846, was 643,700 piculs, or 325,780*l.*; and in 1847, 840,990 piculs, or 498,230*l.* The estimated value of sugar exported from Hong-Kong during 1847 amounted to 144,627*l.*

ST. JOHN DEL REY MINING COMPANY.

SIR,—At the meeting, held on the 14th inst., at the London Tavern, for the election of a director, Mr. Schneider, in alluding to several letters which have appeared in your valuable Journal within the last few months, relative to certain proceedings in the management of this company's affairs, appeared to entain the idea that these letters had been written by me. Mr. Schneider was in error: I have not written any of them. I might have rectified Mr. Schneider's misapprehension at the time, but my mind was so wholly engrossed with the other more important subjects unexpectedly brought forward at the meeting, that the circumstance escaped me when I rose to say a few words. Requesting the favour of your giving insertion to this statement, you will oblige

Cornhill, April 18. C. HERRING, Jun.

ST. JOHN DEL REY MINING COMPANY.

SIR,—Having perused, in your Number of to-day, the report of the proceedings at the meeting of shareholders of the St. John del Rei Mining Company, held on the 14th inst., at the London Tavern, for the purpose of electing a director in the room of Stuart Donaldson, Esq. (resigned), I observe, in giving the numbers polled for the respective candidates for the vacant seat, you omit to mention the fact stated at the meeting, that the majority of Mr. Herring's supporters, including his proposer and seconder, declined to vote, in consequence of the strong inference from what passed and appeared at the meeting, that certain shareholders had distributed their shares to uninterested parties, for the purpose of increasing votes; and the solicitor to the company having decided, that the votes of any parties *presenting* shares, irrespective of their proprietorship, or interest, in the same, would be accepted. [I enclose my card.]

City, April 15. A SHAREHOLDER.

ST. JOHN DEL REY MINING COMPANY.

SIR,—In your report of the meeting of this company, held at the London Tavern, on the 14th inst., in your last Number, you give the number as only 10 who voted for Mr. Herring, and 183 for Mr. Illingworth. The fact is, that the solicitor having decided that any party who *presented* a share, was, whether a *bonâ fide* holder or not, entitled to a vote—and it being strongly inferred that certain parties, large holders, had distributed a number of shares to persons totally uninterested, for the purpose of voting in favour of Mr. Illingworth—Mr. Herring's friends, who were numerous in the room, were disgusted with the proceedings, and altogether declined recording their votes, as the whole affair appeared a farce, rather than the proceedings of men of business. Had the ballot been fairly carried out, I have no doubt Mr. Herring would have been returned.—*Bishopsgate-street, April* 18. * * *

EAST WHEAL CROFTY MINE.

SIR,—Any of your correspondents would oblige me by any information they can give in your next as to the prospects in East Wheal Crofty, and why no dividends in this formerly productive mine have been paid for the past twelve months.—URBANUS: *City, April* 17.

MARKE VALLEY MINING COMPANY.

SIR,—I was gratified to find, by your Journal of the 15th inst., that the prospects of the Marke Valley Mine were improved; but I should have been glad to have seen also a copy of the *cash accounts*, as a discrepancy appears between this and the previous report in December last. It was then stated (vide *Mining Journal*, December 11), "that for the first time, after nearly nine years' outlay, &c., the mine is now paying its own cost;" and that, after paying the liabilities of every description to the 1st December, and including the cost for November—

The balance in favour of the company was	£895	6	4
Since that time, two sales of ore, in Dec. and Feb. have realised	1678	0	0
	£2573	6	4
The working supposed to have cost 350*l.* per month (as in March) would for the four months amount to	1400	0	0
Leaving a balance of	£1173	6	4

Instead of which, it appears to be only 454*l.* 7s. 9d., and which will be still further reduced by 350*l.*, the cost for March. The proceeds of the next sale (on the 20th April) are not referred to, as it does not appear that the proceeds of the sale in Dec. were anticipated in the report which was then presented.

I regret that the nature of my engagements prevented my being at the meeting on the 13th inst., and I cannot but express my disappointment at the report which was then presented. I have addressed this communication to you rather than the secretary, because there are many shareholders who were unavoidably absent, and who will be glad to have some explanation of the discrepancy above alluded to—as, supposing the mine to have paid the cost of working, there ought, at least, to be the same balance as there was four months since.—A PROPRIETOR: *Leicester, April* 19.

HAND-SKETCHES OF MINING DISTRICTS.

SIR,—In your description of the Camborne Consols Mine, you have given your readers very important information, by means of the hand-sketch, and the statements of value of the adjoining mines, which will enable them to form an opinion, and see the desirableness of an investment in such a district—and you deserve their thanks for so doing; and allow me to suggest, the propriety of all persons bringing out a mine having a similar map and statement, which will prevent the discredit of worthless mines being palmed on the public.

I am myself thoroughly convinced, that there is no method whereby a person can obtain so large and certain an income as he can by judiciously taking shares in mining adventures. Look, for instance, at the small outlay which has been made in the seven mines in this Camborne district, of which you have given returns and market value. I think there is great credit due to you, for the trouble you have taken, and the calculations you have made; but it would be more plain, for many of your readers, if these returns had been given in the following form:—

Mines.	Capital.	Returns already made.	Present market value.
Carn Brea	£15,000	£150,000	£90,000
Dolcoath	5,580	300,000	9,300
East Pool	940	20,000	1,920
East Wheal Crofty	11,750	200,000	26,320
North Pool*	4,500	—*	45,000
North Roskear	735	80,000	18,200
Wheal Seton	10,781	30,000	89,100
Total	£49,286	£780,000	£297,120

Thus, your readers, without making any calculations, will see, that adventurers in this district, by an outlay of less than 50,000*l.*, have already realised more than three-quarters of a million pounds sterling, and the property they now hold is worth 300,000*l.* In what other class of investments can you show such enormous returns, and how necessary it is to rid the market of any visionary adventures, which so dreadfully tarnish these splendid and successful ones. Such a course as you have pursued in drawing attention to the Camborne district, is one more calculated to do so than any other that I am aware of.

City, April 20. A SUBSCRIBER,

* You have not the returns made by this mine; at the same time, we may observe, has she has not been long set to work.

MAP OF THE TAVISTOCK DISTRICT.

SIR,—I shall feel obliged if you, or any of your readers, will inform me, if there has at any time been published a map, or guide, to the mining district around Tavistock?—If not, as such would probably prove interesting to many readers of your Journal, perhaps some one of your correspondents, who has the opportunity, would oblige them with a sketch similar to the one given of the Camborne district in the last Number, shewing the relative positions of the different mines in the locality. I should also be obliged by your referring me to where I might obtain the sketch of the Caradon district named by you last week.—A SUBSCRIBER: *Highlickington, Barnstaple, April* 16.

[We shall be happy to give insertion to a map of the Tavistock district, if some of our correspondents will favour us with the plan—the sketch of the Caradon district appeared in the Journal of the 14th Sept., 1844.]

TUTWORK AND TRIBUTE.

SIR,—I was in hopes that I should not have had to intrude on your valuable columns any more, respecting the new mode of setting labour in mines, as there was sufficient matter in my last letter to show my reason for not acting on the same principle; but I find that my letter is an annoyance to the agents of the Perran St. George United Mines, St. Agnes; therefore, I hope that you will oblige me by publishing these few remarks on that subject. I do not intend to trouble you any more on the matter; but if my opponents wish to meet me in any part of this county, to discuss the subject, I am at their service. I am willing to meet any miner in the two counties. I am sorry the writer should have exposed himself in the manner he has; he must be mistaken in what he intended to have said, or he never would have expressed himself so unqualified, as to be obliged to trust to the judgment of the labourer to put a price on his work. I should have thought that men who are placed in such offices as he is, to be men of science, and not dupes. He says, that his bargains are taken at one-fifth, or one-sixth, below his price. How much this shows the want of judgment.

Now, for the mine agent at Milton Abbott, Devonshire: he says, "that I am mistaken; that he obtained his situation through merit, and has had the good fortune to retain it these last 22 years;" if so, what is he doing at Milton Abbott? Secondly, he says, "that I err in describing all our miners to be an indolent set of men." Now, I should be much obliged to this mine agent to show in what manner I described them as such. Is there not among all classes of men those that are good-for-nothings—that are idlers, &c.? Far be it from me to say, that miners do not labour hard enough for the money they get for their work. Poor fellows, many of them are dragging out a miserable existence—a life of toil and hardship—without sufficient food to support Nature; and shall I attempt to make them more miserable? No, no; I leave that to those who have no feelings of humanity. I should have thought that, if a man had been a manager of a mine, or mines, for 22 years, he ought to have tried the experiment himself, before bringing it before the public. I have done with those mine agents in your valuable Journal—not but that I can refute their proposition in detail, as the agents of Perran St. George have said to me; but if they will meet me at Tavistock, at any appointed time that they may mention, and discuss the matter before the public, I am prepared to meet them with more than can be said here.—J. SEYMOUR: *Caradon Wheal Hooper, April* 11.

TUTWORK AND TRIBUTE.

SIR,—It was my intention not to have intruded again on your columns on this subject, but a "Mine Agent" having so abruptly come forward against one of the labouring men of the west, I feel it to be my duty, having once taken up the subject, to make a few additional remarks. My friend, of Milton Abbott, says, he had hoped his address "would have been commented on by a good miner, and not a poor one." How absurd to speak so degrading of a fellow labourer; was he never one himself?—if not, he had better say but little about his practice in mining; the sneering observation shows how much he has the interest of the labourers at heart. In his two last letters, he says he does not wish to impose a heavy tax on the working miner, nor does he think the new system would be an inducement to the poor man to take a pitch below a fair price. This is a palpable contradiction—for, in another place, he says, "we shall have one fourth more work done for the same money." If the men in his employ, in by-gone days, have been over-paid, that is his look out, and only shows his own want of judgment; while, though a mine agent, of 22 years' practice, he ought to have known better, and not have condemned all others by his own lack of knowledge. If a "Mine Agent" ever worked under ground as a miner, he must have always found plenty of work for little money; I have always found it so. He says, the plan myself and the poor miner wish to be in operation, is not sufficient to remedy the present evil; but we wish to be informed, what are the evils of the present system? I am satisfied, if the proposed plan was in operation throughout the two counties, bloodshed and death would be the result.

There is one thing more which I cannot let pass; throughout his letter he insinuates that a poor miner is not capable of commenting on his observations; as if a man's abilities were to be judged of from his poverty; I am persuaded, if a "Mine Agent" were to come in contact with some of those *poor* miners, as he is pleased to call them, he would soon be confounded; for I never knew a man so condemn himself as he has, in his contradictory writings. I have always endeavoured to treat my men according to their merits, and let the man who does the most work, in the best manner, get the most money.

Caradon Wheal Hooper, April 21. J. SEYMOUR.

TUTWORK AND TRIBUTE.

SIR,—The agents of Great St. George Mine seem to have forgotten, that the settings in most mines are public, and any stranger may offer for a pitch, or bargain, before it is knocked down to the first bidder; and if the men will not offer one over another, or take one another's bargains, they know it is necessary to refuse before they can get a fair price. A CORNISH MINER.

MINING IN SOUTH AUSTRALIA.

In the 11th page of this day's Journal, will be found an important letter from our correspondent in South Australia; together with reports of the meetings of the South Australian Mining Association, the Princess Royal, and Mount Remarkable Special Survey and Mines Companies, at Adelaide; and the Australian Mining Company, in London; also, a report from the Barossa Range Mining Company.

SOUTH WHEAL BETSEY.—The adventurers met, for the first time, on Saturday last, when the majority of shareholders were present—among whom was the managing agent of Devon Great Consols. To have the services of one whose ability as a miner, and general information on the locality, are well known, must prove a source of gratification and encouragement to the adventurers. South Wheal Betsey is one of those mines likely to produce large results with a small outlay—inasmuch as the adit, 40 fms. deep of the Wheal Friendship Mine, passes within 13 fms. of the rich lead lode of the Great Wheal Betsey Mine; and already there is a large bunch of lead in sight in the shallow adit likely to produce an immense quantity of ore from the backs, which rises from 30 to 40 fms. All this ore can be taken away without the assistance of machinery. The richness of the ore for silver surpasses the majority of mines in this locality. In six weeks, the lode will be cut in the 40 fm. level. Another great feature in this mine indicates a durable promise; since, within the past week, a very promising copper lode, 5 ft. wide, has been discovered on the surface, composed of rich gossan, peach, mundic, &c., parallel with the Wheal Friendship Mine, at a distance of only 300 fms., and similar as regards indications, which can be cut in the 40 fm. level for 5*l.*; and, to accomplish this, operations will be immediately commenced; and, should the lode cut rich, the mine will at once be considered of the first importance. When it is remembered, that the Wheal Friendship has produced 400,000*l.* profit, and is still looking well, there is every reason to calculate on a large course of copper, 50 fms. south of the above lode—inasmuch as a great body of greens is spread over one side of the deep adit level at 45 fms. deep, with the favourable omen of a quantity of water issuing therefrom. No lode is at present seen at surface; but it is intended to drive a level from whence the greens are issuing; and there cannot be a doubt but the lode will make its appearance before 3*l.* is expended. Under all these circumstances, it is confidently expected that this mine will make one of a lasting and most important character. No mine has yet been discovered within the immediate locality of Wheal Friendship. It may be remarked, that 15,000*l.* worth of work has been already done, of which the South Wheal Betsey adventurers have the benefit—so that about 1*l.* per share will put this mine in good working condition; and it is anticipated no other call will be required.

LLANDUDNO OLD COPPER MINE.—This mine, which is situate in the parish of Llandudno, in the county of Carnarvon, occupying 800 acres of ground, comprising the whole of the downs on the Great Orme's Head, and which, in 10 years, from 1836 to 1845, both inclusive, returned with partial and limited working, nearly 112,000*l.* worth of copper ore, or 11,200*l.* per annum, is again proposed to be taken up by a company. We understand the mine is in regular operation—is now producing ore, and has steam and water pressure engine, pit, and pumpwork, every necessary building, and machinery at surface and in the mine, for successfully carrying on operations. There are also 10 cottages, an excellent shipping place; and the company will possess one half share of a deep adit, lately completed at Morfa Ucha, and which will drain both this and the new mine. There is but little water in the mine, and from the returns already made in this, and in the adjoining mine, with the fact that there are yet hundreds of acres of virgin or untried ground, very sanguine expectations are entertained by those well experienced in mining affairs, that this property will prove a most eligible investment, and pay handsome dividends on the capital embarked. Capt. Francis surveyed this property in 1845, and again in 1848; and in his report he says, "This mineral grant extends over more than a square mile of surface, and has running through it, from north to south, two mineral channels of ground, from 30 to 40 fms. wide, containing a great number of parallel veins, nearly vertical, also cross and oblique veins, underlaying at different angles, and a great many horizontal beds running from east to west, and dipping northward. I calculate the 100 fms. long of worked ground has yielded 200,000*l.* worth of ore, equal to 2000*l.* per fm in length; very rich bunches of ore have been worked, and are still in course of working, making good returns, and fair profits; and, from appearances, those already discovered will go on to do so for years to come." With a view to carry out the operations recommended by Capt. Francis, for successfully working the mine, the present proprietor proposes to form a company, which himself and friends will join, to purchase his interest for 11,250*l.*, such company to consist of 1000 shares, of 20*l.* each; and that a meeting be called on the allotment of the shares, for the purpose of making a call, to pay the purchase money, and raise funds for the immediate and active working of the mine.

PERRAN WHEAL VIRGIN.—At a meeting of adveuturers, held at the Royal Hotel, Truro, on the 12th inst., the accounts, as follows, were allowed, and a call of 10s. per share made for the future working of the mine.—To balance from last account, 21*l.* 3s. 2d.; costs and bills for Dec., Jan., Feb., and March, 395*l.* 1s. 5d. = 416*l.* 4s. 7d.—By division of cost and call made in Dec., 208*l.* 1s. = 208*l.* 3s. 7d.—Less cost not received, 43*l.* 6s. 8d.; loss divided, 164*l.* 16s. 11d.

[From the *Plymouth Journal*.]

WHEAL FRANCO.—The lode in the 47 fm. level, east of the cross-course, improves as the shoot of ore ground in the 32 fm. level is approached, still the progress is slow. There is a change in the capels in the 62 fm. level, which indicates that the lode is not far off.

WHEAL YEOLAND.—Nothing further can be known of the main lode, until the lode is cut in the 22 fm. level or in the adit level. The new south lode is very much improved.

TAVY CONSOLS.—Since Tuesday week, we have dropt the standing lift from the 24 to the 36 fm. level, and the pumps work well. We shall now have no more delay until we get down to the next level. The tributors have cut a good bunch of ore in the back of the 24 fm. level. The other pitches are looking as usual.

HEIGHSTON DOWN CONSOLS.—Our correspondent writing from Callington, says:—"I regret to inform you that this mine was, on Monday, added to the list of 'knocked bals.' The men are now engaged in taking up the materials."

Stray Park Mine, Camborne.—As W. Paul, a miner, was standing in the smithy, he suddenly fell to the ground, and instantly expired.

Eckyley.—Biggs, a collier, was killed at the Bookery Colliery by a fall of coal.

Cwmbran.—T. Williams was killed here by a fall of stone.

Aberdare.—E. Llewellyn was killed by a fall of coal at the River Level Colliery.

Caerleon.—C. Freeborne was about to unhitch the horses of a train of loaded coal waggons at the incline, when he slipped down, and the first waggon passed over his arm; his brother had the presence of mind to drag him out, or he must have been killed. This arm was amputated under the effects of chloroform, and he is doing well.

Dowlais.—D. Thomas, while engaged in the fitting shop, was caught by the bands, and drawn into the machinery; he was awfully mangled, and died immediately.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.

Bank Stock, 9 per Cent., 187 9
3 per Cent. Reduced Ann., 81⅛ 80⅞
3 per Cent. Consols Ann., 82⅛ ⅜
3 per Cent. Annuities, —
3½ per Cent. Ann., 82⅛ 1⅜
Long Annuities, 8⅛
India Stock, 10½ per Cent., 227
3 per Cent. Consols for Acc., 82⅛ ⅜
Exchequer Bills, 1000*l.* 3d., 40 44 pm.

Belgian Bonds, 4½ per Cent., —
Dutch, 2½ per Cent., 40 39 ⅝
Brazilian, 5 per Cents., 66
Chilian, 6 per Cents., —
Mexican, 5 per Cents., 15⅝ 15
Spanish, 5 per Cents., 11¼ ½
Ditto 3 per Cents., 20⅜ ⅜
Portuguese, 5 per Cents., —
Russian, 5 per Cents., 88 9

MINES.—The mining share market has continued remarkably dull throughout the week, the transactions being very limited, and purchasers generally appear to be waiting for lower quotations, but upon what ground we cannot foresee; if we were to calculate on the improvement which we have recently been advised of, we should hope that shares in such mines will soon be in request.

Some shares in Devon Great Consols have changed hands, and from the splendid position of this extraordinary mine, we anticipate much business being shortly done. We are advised that they have opened at intervals, on the course of the lode, for nearly a mile east of Josiah shaft, where they have found the lode 18 ft. wide, and of the same character. This important discovery (which has been named Wheal Emma) will be adding a rich mine to already the most productive one in Great Britain. The winze in the eastern shaft of Wheal Fanny is worth upwards of 260*l.* per fathom, and the other parts of the mine are looking well.

The copper lode at Kelly Bray (Callington Mines) has considerably improved, and inquiries have been made for these shares at former quotations. Carwinning Hills have also been in demand, but not at sellers' prices.

Shares in the following mines have been done:—Callington, Devon Great Consols, Trehane, Herodsfoot, Calstock, South Wheal Betsey, Bedford United, East Tamar, Tin Vale, East Wheal Friendship, &c.

Stray Park and Camborne Vean Mining Company held their account meeting last week. The statement of accounts furnished presented a profit, on the four months working, of 280*l.*, which, with the balance brought on from the last account, leaves 836*l.* carried to the credit of the company.

We are advised of a great improvement in Wheal Mary Ann Mine, in the 40 fathom level, south from Trelawny boundary; the lode is reported to be worth 1½ ton of lead per fathom.

A leading contemporary, in their money article of Monday last, in noticing the meetings of the past week, observes—"In only one instance—that of Wheal Seton—has a dividend been declared." The incidental circumstance of our noticing seven meetings which had occurred during the week, and only *one* paying a dividend, is not a fair criterion to merit the remark; although, if one-seventh of our British mines were paying dividends under the present excessive depression of the standard for copper ore, we should have no reason to complain. We have, therefore, made a brief analysis of the seven mines referred to, and have arrived at a most satisfactory conclusion, which we submit:—

Wheal Seton gave a dividend of 20*l.* per 90th share, for the last two months, leaving a profit of 846*l.* in hand.

Tresavean ores for the two months sold to the amount of 3093*l.*; the costs amounting to 2903*l.*, leaving a profit of 190*l.*, with a former balance of 607*l.*, leaves 797*l.* in the purser's hands.

Wheal Basset ores for the two months sold for 1530*l.*; labour and merchants' bills, 1555*l.*: leaving a profit of 15*l.*

Tavy Consols account, for the two months, shows a profit of 373*l.*—the ores sold realising 689*l.*; and 62 tons (unsold) estimated at 300*l.* = 989*l.*: expenditure 616*l.*

Condurrow ores sold 1198*l.*; costs, &c., 1186*l.*: leaves a profit of 12*l.* on the two months.

Grambler and St. Aubyn Mines have sustained a loss of 140*l.* on the two months.—Wheal Calstock is a new mine, in which they are only, at present, driving the adit levels, which are represented as being highly encouraging, but no returns have as yet been made.

By the above, we find that five mines out of the seven are working to a profit; and, with a fair standard, we might fairly calculate on these paying dividends; and the sixth mine meeting costs.

At the meeting of West Wheal Providence adventurers, a dividend of 12*s.* per share was declared.

Shares in foreign mines have been equally flat. St. John del Reys have been in request, and some transactions have taken place. The Imperial Brazilian Mining Company have received letters from the mines, but they are of very little importance; from the mines, 18 lbs. 4 ozs. 16 dwts. of gold have been raised, between the 1st Jan. and the 12th Feb.

The following arrivals of specie have taken place since our last:—At Southampton, on Monday, the 17th inst., by the Royal Mail Steam-Packet Company's ship *Dee*, with West Indian and Mexican mails, with specie, value 5555*l.*, and jewellery, value 6517*l.* On Tuesday, at Liverpool, the *Caledonian*, from New York, with specie, value 6000*l.* on freight.

RAILWAYS.—At the commencement of the week the declining tendency in the British funds produced some returning weakness in the share market; prices declined about 1*l.* a share, and the market was generally inactive, and remained flat until Thursday, when both English and French shares were a shade better, and more business done. It was affirmed that the Northern French line would not be interfered with by the Government, and petitions are lying in London, for signature against the threatened expropriation of the other lines. The Paris and Lyons Company is the only case where the proprietors have consented to the proposals of the Government.

HULL, THURSDAY.—We have no particular change to report in the share market during the past week; the same inactivity prevails, and must, we fear, so continue, until the aspect of the political world shall be more cheering. To-day, however, owing to the improved tone of the markets in London, stock has found more ready sale, at slightly improved prices.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Price per share	Last Div.	*Traffic Returns.* 1848	1847
Birkenhead, Lancashire, & Chesh.	15	997,284	37	5 p.c.	£635	755
Caledonian	130½	3,594,470	27	—	3585	—
Dublin and Drogheda	35	754,529	52	—	716	846
Dublin and Kingstown	7	473,282	—	7	635	746
Dundee, Perth, & Aberdeen June.	47	415,073	26½	8	886	287
East Anglian (Lynn to Ely)	55½	1,062,742	6⅛	—	447	—
East Lancashire	24	1,733,915	17½	—	965	739
Eastern Counties	221½	8,259,709	13⅛	4	11783	10332
Eastern Union	50	979,926	80	—	1032	1008
Edinburgh and Glasgow	53	2,375,745	41	6	3386	3349
Edinburgh and Northern	29	953,207	14½	—	1223	—
Glasgow, Paisley, and Ayr	64½	2,097,321	70	7	2026	2405
Glasgow, Paisley, & Greenock	23	845,554	15	4	951	1132
Gt. Southern & Western, Ireland	110½	1,876,326	20	—	—	1431
Great Western	281½	10,970,636	88	7	18701	19653
Kendal and Windermere	10½	169,888	23	—	124	—
Lancaster and Carlisle	70	1,395,193	42	4	1607	1096
Lancashire and Yorkshire	124½	7,597,618	86	7	9003	8707
London and North Western	428	21,513,354	128	8	38012	41716
London and Blackwall	4	1,241,061	4⅛	1⅝	720	924
London, Brighton, & South Coast	161½	6,087,822	28⅛	4	7346	7167
London and South-Western	189	6,264,164	44⅛	8	7572	7565
Londonderry and Enniskillen	14½	145,135	16	—	154	—
Manchester, Sheffield, & Lincolnsh.	46	2,336,624	80	5	2169	2135
Maryport and Carlisle	28	440,851	40	3	509	581
Midland Company	402½	9,853,122	97	7	19210	18660
Midland Great Western (Irish)	36½	583,776	10½	—	1088	—
Newcastle and Carlisle	66½	1,184,080	105	6	—	2165
Norfolk	81½	1,624,150	62	5	1773	1879
North British	78	2,800,748	20⅛	5	1774	1428
Shrewsbury and Chester	17	780,272	15½	7½	554	468
South Devon	29	1,609,071	20	5	782	622
South-Eastern	165½	6,932,181	22½	6½	6918	9169
Taff Vale	38	820,056	—	8	1681	1467
Ulster	36	646,211	52	6	952	993
Whitehaven Junction	12	147,095	—	6	172	—
York, Newcastle, & Berwick	242½	4,466,526	30	9	10336	8712
York and North Midland	230½	3,799,297	64⅛	10	7889	5789
FOREIGN RAILWAYS						
Amiens and Boulogne	68½	573,338	5⅛	4	—	—
Antwerp to Ghent (monthly)	31	—	—	—	845	903
Belgian ditto	—	—	—	—	—	—
Dutch Rhenish	57½	—	⅜	—	1105	—
Northern of France	211	2,000,000	3⅛	4	10428	11006
Orleans to Bourges (Central)	107½	—	—	—	2470	—
Orleans to Tours	72	600,000	32⅛	4	2310	3042
Paris and Orleans	82	2,011,720	19	12½	6754	7871
Paris and Rouen	85	2,082,916	13⅛	11⅛	—	8376
Rouen and Havre	59½	—	7	4	—	1986
Strasburgh and Basle (monthly)	88	—	6	1½	5392	6168
West Flanders ditto	—	—	1½	—	925	—

Total earnings for last week, £175,472, being an increase of £14,536 over last year.

LATEST CURRENT PRICES OF METALS.

LONDON, APRIL 20, 1848.

	£ s.	£ s. d.		£ s.	£ s. d.
IRON—Bar *a*..Wales..*ton*	6 10—	7 0 0	COPPER—Ord. bottoms ..	0 0—	0 0 11
„ ..London ..	0 0—	8 0 0	YELLOW METAL SHEATHING	0 0—	0 0 8½
Nail rods „	0 0—	9 0 0	TIN—Com. blocks *g*...*cwt.*	0 0—	2 19 0
Hoop(Staf.) „	0 0—	10 0 0	„ bars	0 0—	4 0 0
Sheet „ „	0 0—	11 0 0	Refined	0 0—	4 3 6
Bars „ „	0 0—	9 10 0	Straits *h*	0 0—	3 16 0
Welsh cold-blast foundry pig ..	4 0—	4 5 0	Banca	0 0—	4 4 0
Scotch pig *b*, Clyde	0 0—	2 1 0	TIN-PLATES—Ch., IC *i*, *box*	1 7—	1 9 0
Rails, average	7 0—	7 10 0	„ 1X ...	1 13—	1 15 6
Chairs	0 0—	4 4 0	Coke, IC	1 4—	1 4 6
Russian, CCND *c*..	0 0—	17 0 0	„ 1X	1 10—	1 10 6
„ PSI	0 0—	——	LEAD—Sheet *k* .....*ton*	0 0—18	0 0
„ Gourieff	0 0—	——	Pig, refined	0 0—18	5 0
„ Archangel	0 0—13	0 0	„ common	0 0—17	0 0
Swedish *d*, on the spot	0 0—11	10 0	„ Spanish, in bd.	0 0—17	0 0
„ Steel, fagt.	0 0—16	0 0	Red.....	0 0—19	0 0
„ „ kegs *e*	0 0—13	10 0	Dry White.....	0 0—23	0 0
COPPER—Tile *f*	0 0—87	10 0	Shot (Patent).....	0 0—20	0 0
Tough cake	0 0—88	10 0	SPELTER—(Cake) *l* on spot	13 5—13	10 0
Best selected	0 0..91	10 0	for arrival	13 0—13	10 0
Ordin. sheets, *lb*...	0 0—	0 0 10	ZINC—(Sheet) *m* export.	0 0—	23 0 0
			QUICKSILVER *n* .....*lb.*	0 0—	0 4 0

Quotations remain almost precisely as quoted in last week's *Mining Journal*, but with scarcely any business doing—not from want of orders, but owing to the continued disturbed state of political affairs on the continent.

GLASGOW PIG-IRON TRADE, APRIL 21.—The low price of pig-iron has this week caused an increased inquiry after the article; and as, at present, it is in few hands, and firmly held, the price within the last few days has advanced. The sales during the week have been made at from 41s. to 42s., for cash. To-day the price may be quoted at 42s. 6d.

EXPORTS OF METALS TO ALL INDIA FROM LONDON AND LIVERPOOL, FOR THE THIRD MONTH OF 1847 AND 1848.

Metals.		1848.	1847.	*In.in* 1848.	*Dec.in* 1848.
Spelter	*Tons*	466	200	266	—
Copper		1128	1532	—	404
Iron, British		4108	2181	1927	—
Ditto, foreign.....		145	231	—	86
Tin-plates	*Boxes*	1238	789	449	—
Lead	*Tons*	156	360	—	204
Steel		51	263	—	212
Quicksilver.....	*Bottles*	—	—	—	—

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—Silver coin to Rotterdam, 31,000 ounces; Port Adelaide, 24; Hamburgh, 14,020; Belgium, 6000; silver bars to Rotterdam, 80,600; Hamburgh, 5000: gold coin to ditto, 447; Calais, 18; Belgium, 5145; New York, 1090; Boulogne, 250; Havre, 1469.—Silver coin to Rotterdam, 10,000*l.*; gold coin to Havre, 457.; bullion to ditto, 2230*l.*; Rotterdam, 1300*l.*

THE IRON TRADE.—Any attempt to furnish an exact account of the state of the iron trade in detail would require access to sources of information from which the jealousy of commerce almost absolutely precludes the public. A more than usual degree of taciturnity marked the quarterly meeting just over; reluctance to express any decided opinion respecting the position and prospects of the business has seldom been more manifest. Uncertainty as to both seemed the predominant feeling. The state of one or two or of a few firms furnished, seemingly, no means of judging of the position of others, and nothing like a sound opinion of the general state of the trade could be acquired. Some firms, it was said, were busy; others, it was represented, had little to do. Under these circumstances prices were nominally maintained at Birmingham on Thursday, and confirmed at the meeting at Dudley on Saturday last; although we are assured that the quoted prices are extensively given and required; and, although considerable orders may continue to be executed at the declared rate, because upon undoubted authority we are informed that for cash a reduction of 10s. per ton, or even a larger amount would, by many firms, be submitted to. Nor can either the assertion or the circumstance be regarded as extraordinary. Railway enterprise and speculation induced a demand which it required uncommon exertions to meet. This had not been resumed, and the demand for other purposes, owing to the general flatness of trade, is not extensive. Thus, a kind of collapse, after a large extension of make, has taken place. Continental affairs, also, exercise a depressing influence, though not in manufactured iron to such a serious extent as might be expected. The prices fixed for the quarter are the same as during the last three months—namely, bars, 8*l.* per ton; rods, 8*l.* to 8*l.* 10s.; hoops, 8*l.* 10s.; and sheet, 9*l.* 10s.; other descriptions of iron to bear proportionate prices. It is understood that a proposition was made for a reduction of 1*l.* per ton; but, as it was thought that this would have a bad effect upon some of the smaller makers, it was abandoned. Sales of pig-iron, however, are being made at 3*l.* 10s. to 4*l.* per ton. Manufactured iron is selling at—bars, 7*l.* to 8*l.*; hoops, 8*l.* to 8*l.* 10s.; sheets, 9*l.*; rods, 8*l.* per ton.—*Wolverhampton Chronicle.*

MEETINGS OF PUBLIC COMPANIES DURING THE WEEK.

THIS DAY ....Claridge's Patent Asphalte Company—offices, at Two.
TUESDAY.....London Corn Exchange Company—offices, at One.
THURSDAY ....Patent Galvanised Iron Company—London Tavern, at One.
Globe Insurance Company—offices, at One.
FRIDAY.....Blaenavon Iron and Coal Company—offices, at Two.
Demerara Railway Company—London Tavern, at One.
Price's Patent Candle Company—London Tavern, at Twelve.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

SCOTTISH CENTRAL RAILWAY.—Lord Duncan (the chairman), and several of the directors and officials, of this company, accompanied by some other gentlemen of note in the railway world, traversed the line on Wednesday morning last, by a special train from Stirling to Perth, the northern terminus. The style of execution of the works, some of which are of a formidable character, gave the greatest satisfaction to the whole party, especially the tunnel through Moncrieff Hill—the road through which, we have been informed, was completed only a few minutes before the passing of the train. We rejoice that there is an immediate prospect of this important line being opened to the public throughout its entire extent—forming a direct continuation of the London and North Western, Lancaster and Carlisle, and Caledonian Railways, towards the north.

— We received, this morning, a communication from Perth, dated the 20th inst., announcing that a general meeting had been held that day—Lord Duncan in the chair—when the bill for the leasing of the Scottish Central line to the Caledonian, Lancaster and Carlisle, and London and North-Western Railway Companies, was approved of by a majority, amounting to three-fourths of the shares represented. The directors were at the same time empowered to carry into effect the working agreement with those companies; and a resolution, approving of the whole policy of the board, was carried without a division.

OPENING OF THE NORTH STAFFORDSHIRE RAILWAY TO NORTON-BRIDGE.—On Monday last, the line from Stoke to Norton-bridge, connecting the Potteries with the London and North-Western Railway, was opened for passenger traffic, in the presence of an immense concourse of spectators. The electric telegraph on the line has been completed, and is now at work. The day was kept as a general holiday by the inhabitants of the Pottery district. The directors distributed 250*l.* amongst the poor, instead of treating the men employed on the line. The works on the other portions of the railway are being pushed forward with all possible speed.

OPENING OF THE BOULOGNE AND AMIENS RAILWAY.—This line, now forming a complete railway communication between Boulogne and Paris, was traversed, for the first time, on Monday last, by the ordinary passenger trains.

SOUTH DEVON RAILWAY—PLYMOUTH, APRIL 20.—During the last few days, the works on the line have been greatly retarded by the state of the weather. Nevertheless, every exertion is being made to open the line to Laira as early as possible. The uprights for the electric telegraph are erected to within one mile of Brent, and the attaching the wires will commence next week. The viaducts have been tested by an engine and several heavily laden trucks, and appear, as the navvies say, to stand the work very well. A locomotive will pass over the whole line, from Totnes down to Laira (the Plymouth station), this week, and it is believed, that the line will be opened on, or about, the 2nd of May. It is said, that the requisite notice has been given to the Government-Inspector, that the line is ready for his inspection. Their will be no goods station at the Laira, but light goods will be carried over the line at once—all such articles as will come under the denomination of parcels, and also fish, which now forms a large and important item of traffic by rail from Plymouth.

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE RAILWAY.—The works on this line of railway are progressing but slowly in the neighbourhood of Retford, yet we believe they are going on satisfactorily. The tunnel of upwards of half a mile in length, through the Clarbro' hill, is proceeding to the satisfaction of the chief engineer; and the bridge over the line on the North-road, a little to the south of Retford, is fast progressing towards completion. After the tunnel, the next work of importance in the immediate neighbourhood of Retford is the bridge of three arches across the river Idle, in the Ordsall Lows. The ground is here a complete peaty bog; and such was its defective nature, that, after the workmen had dug full 7 ft. deep for foundations, it was still found so insecure, that it was then deemed necessary to pile the whole. In digging out these foundations, large trees were found imbedded full 7 ft. deep, and the whole space was found full of firs, the same as are found in the levels of Hatfield Chase, and no doubt they have lain here for several centuries. When taken out at first, the wood was as soft as clay, but after having been exposed to the atmosphere for some time, it shrinks greatly, and then turns as hard as a stone. The bridge, as we have stated, consists of three wide arches, one of which crosses the entire stream, and the other two are intended as flood-arches. The quantity of bricks already swallowed up amount to upwards 600,000, and the work will be ready for the battlements in a few days. The key-brick (being the completion of the arches) was laid at 3 o'clock in the afternoon of Friday last, amidst a large concourse of spectators, by Mr. Bullivant, jun., of East Retford. Several capital speeches were made by the gentlemen of that town, and some of those connected with the works, after which there was plenty of wine, and an abundance of ale for the workpeople, and the whole passed off in a highly-satisfactory manner.—*Doncaster Chronicle.*

FALL OF METEOR DUST.—Accounts from Vienna describe some remarkable phenomena of this sort, which occurred during the night of the 31st Jan., and covered the snows near that city, and the greater part of Lower Austria, with a layer of grey, earthy, impalpable powder, blown thither by a sharp east wind of continuance. When the dust fell, the wind ceased, and the temperature arose. Prof. Reissek, Dr. Wedl, and other scientific persons, have carefully analysed this substance, the chief portions of which consist of granules of quartz, particles of mica, humus organic remains, and some fragments of wood, coal, plants, insects, and infusoria. The air thus laden is held to have been derived from the steppes of Russia, and to have passed over the Carpathian chain. The learned professor maintains this view, by comparing the circumstance with the falls of manna, which occur periodically in Asia Minor, Persia, and the Caucasus. The falls take place at the same period, and are impelled by the north-west winds, which carry along the manna lichens growing in the regions between the Aral and the Caspian Seas, and often deposit them after their aerial voyage over the mountain range of Ararat, in the most western parts of Asia Minor.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	7 ..	—
512	Albert Consols.....	1 ..	2½
1024	Alfred Consols	4½..	14
235	Andrew and Nangilles	28½..	10
1000	Antimony and Silver-Lead Mining & Smelting	5 ..	5
1624	Balleswidden	9 ..	18
128	Balnoon Consols.....	25 ..	25
10000	Banwen Iron Co.....	2 ..	—
1000	Barristown	4½..	3
4000	Bedford	2½..	3
128	Besore Lead Mine....	14 ..	10
1244	Birch Tor Tin Mine....	9½..	2
8000	Blaenavon	50 ..	23
100	Botallack	175 ..	80
120	Brewer	5 ..	7
10000	British Iron, New, regis.	10 ..	13
—	Ditto ditto, scrip.....	10 ..	10
128	Budnick Consols	52½..	30
128	Burthy	20 ..	21
128	Callestock	17 ..	30
1000	Callington	19 ..	30
20000	Cameron's Steam Coal	4 ..	5½-¼
256	Caradon Copper Mine	9½..	2
256	Caradon Mines	22½..	17
256	Caradon United	24 ..	5
256	Caradon Wh. Hooper..	21 ..	14
1000	Carn Brea	15 ..	90
3000	Carthew Consols.....	1½..	6
2048	Cascade.....	1 ..	2
112	Charlestown	220 ..	30
166	Cleveland.....	9 ..	5
512	Coatlithe Hill	¼..	1-1½
1900	Combmartin	7½..	3
500	Comblawn	5½..	6
128	Comfort	45 ..	90
256	Condurrow	20 ..	30
2560	Cook's Kitchen	14 ..	2
1000	Coombe Valley Quarry	2½..	3½
6500	Cornish Mining Co. ...	2 ..	2⅝-¼
1000	Copper Bottom	1½..	6½
1024	Cosheen	4½..	20
240	Craddock Moor	16½..	15
128	Creeg Braws	120 ..	100
500	Cubert Mine	12½..	10
1000	Cwm Erfin	3 ..	3½
300	D.Prior & Buckfastleigh	14 ..	26
7100	Derwent	8½..	5
1024	Devon&CourtenayCon.	7½..	2½
1024	Devon Great Consols..	1 ..	210
1000	Dhurode	2 ..	5
186	Dolcoath	30 ..	40
2560	Drake Walls	4 ..	4
10000	Durham County Coal..	45 ..	9
3000	Dyfngwm	10 ..	12½
256	East Alvenney	10 ..	25
112	East Caradon	47 ..	47
2048	East Crowndale	5½..	4½
512	East Combe Silver-Lead	6½..	6½
128	East Pool	5 ..	15
100	East Relistian	22 ..	40
9000	East Tamar Consols ...	½..	1
—	East Wheal Albert....	1 ..	3
94	East Wheal Crofty....	125 ..	280
1024	East Wheal Fortune ..	2 ..	3
1024	East Wheal Friendship	3 ..	3½
128	East Wheal Rose	50 ..	1000
2048	East Wh. Rough Tor ..	¼ ..	2
—	East of Scotland Iron Co.	2½..	1½
123	East Wheal Seton	14 ..	10
256	Elborough.....	1½..	2
256	Exmoor Wh. Eliza....	3½..	6
512	Fowey Consols	40 ..	45
6400	Gadair	2 ..	2
20000	Galvanised Iron Co. ..	10 ..	9½
4000	Gen. Mining Co. for Irel.	1½..	1½
2048	Georgia Tin Mines	1½..	1½
256	Gonamena	32½..	30
128	Goonvrea	4 ..	1½
244	Grambler & St. Aubyn — .		10
100	Great Consols	1000..	400
256	Great Callestick Moors	22..	25
2560	Great Michell Consols	1½..	3½
256	Great Retsugga Moor ..	11 ..	8
512	Gt. Wh. Rough Tor Con.	15½..	18
100	Grogwinion	5 ..	—
256	Gwinear Consols.....	7 ..	6
6000	Heigneton Down Con..	½..	2½
256	Herodscombe	5½..	4½
256	Herodsfoot	18 ..	19
10000	Hibernian	12½..	1⅞
239	Hobb's Hill	6 ..	3
1000	Holmbush	19 ..	9
827	Kirkcudbrightshire....	5½..	5
2048	Lamheroee Wh. Maria	11 ..	4
128	Lelant Consols	90 ..	60
160	Levant	— ..	90
1000	Lewis	15 ..	6½
1000	Llwyn Malces	5 ..	—
3500	Llynvi Iron	50 ..	50
256	Lostwithiel Consols ...	15 ..	15
6000	Marke Valley	10 ..	4½
5000	Mendip Hills	2½..	1
5000	Merionethshire Slate & Slate Slab Co...	1½..	2
20000	Mining Co. of Ireland	7 ..	5½-6
256	New East Crowndale..	3½..	3½
128	North Fowey Consols..	37 ..	34
100	North Pool	45 ..	450
140	North Roskear	5½..	130
256	North Wh. Abraham ..	1 ..	1
262	North Wh. Leisure ..	1½..	2
128	North Wh. Providence	2½..	3
15000	Northern Coal Co.	23 .	2
128	Par Consols.....	— ..	1000
4000	Pennant	1½..	2
100	Penrhiw	30 ..	65
1280	Perran St. George Un.	13 ..	20
128	Perran Wh. Virgin....	9½..	10
512	Plymouth Wh. Yeoland	6½..	23
256	Polsaith Consols	4½..	7
112	Providence Mines	35 ..	45
10000	Rhymney Iron.....	50 ..	20
10000	Ditto New	7 ..	6½
2500	Rhoswhiddol Mine	— ..	10
1000	Rosewall Hill	1 ..	5
256	Rosewarva Mines	— ..	12
—	Shotts Iron Company..	50 ..	50
1100	South Dolcoath	3 ..	2½
128	South Caradon	10 ..	450
256	Sth. Friendsh. Wh. Ann	16 ..	25

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
200	South Harvannah	10 ..	25
—	South Molton	5 ..	10
256	South Tolgus	7½..	42
256	South Treiawney	20 ..	11
128	South Yeoland	16½..	20
128	South Wheal Basset ..	110 ..	70
256	South Wh. Betsey....	2½..	12½
124	South Wh. Francis....	160 ..	235
256	South Wh. Hope	— ..	5
1000	South Wh. Maria.....	2½..	2
256	South Wh. Sophia	4 ..	4½
10000	Southern&Western, Irish	2 ..	4
280	Spearne Moor	30 ..	40
256	St. Austell Consols....	9 ..	6
94	St. Ives Consols	— ..	320
128	St. Michael Penkivel ..	5 ..	10½
999	St. Minver Consols	1 ..	5
1000	Stray Park	43 .	17
9600	Tamar Consols	3 ..	4½
1024	Tavy Consols	4 ..	9
6000	Tincroft	7 ..	4
1000	Tin Vale.....	2 ..	4½
128	Tokenbury	147½..	10
256	Trehane	2 ..	26
5000	Treleigh Consols.....	6 ..	3
2000	Trenance	2 ..	50
96	Tresavean	10 ..	210
120	Trethellan	5 ..	16
120	Trevisksy and Barrier	130 ..	125
288	Trevean	1½..	25
128	Trewellard	12 ..	26½
100	United Mines	300 ..	350
256	Wellington Mines	15 ..	25
128	West Basset.....	45 ..	25
256	West Caradon.....	20 ..	100
128	West Cargoll	2 .	12
512	West Fowey Consols ..	40 ..	15
256	West Providence.....	9 ..	25
200	West Seton	40 .	160
—	West of Scotland Iron Co.	210..	210
120	West Trethellan	5 ..	30
256	West United Hills	— ..	5-8
512	West Wheal Francis ..	1⅛..	5
256	West Wh. Friendship..	9 ..	11
3845	West Wheal Jewel....	11 ..	1½
2560	West Wh. Maria.....	3 ..	1
256	West Wheal Shepherd.	5 ..	2⅝
256	West Wheal Tolgus ..	21½..	7
256	West Wheal Treasury	19 ..	15
5200	Wicklow Copper.....	5 ..	10⅝
184	Wheal Adams	51 ..	10
1000	Wheal Agar.....	— ..	10
256	Wheal Albert	10 ..	8
128	Wheal Acland.....	13 .	2
256	Wheal Allen	2 ..	5
240	Wheal Anderton.....	21 ..	20
128	Wheal Ann	— ..	50½
512	Wheal Ann, Bridford..	1 ..	2
512	Wheal Anna Maria....	4½ ..	5½
1024	Wheal Ash	4½..	8
120	Wheal Bal	5½..	20
2560	Wheal Barbara	1½..	4-5
256	Wheal Benny	10½..	6
256	Wheal Blencowe	21 ..	5
256	Wheal Bucketts	20 ..	5
256	Wheal Calstock	5 ..	6
136	Wheal Clifford	190 ..	190
1024	Wheal Coad	½..	5
128	Wheal Courtenay	— ..	20
6000	Wheal Curtis	3 ..	3½
256	Wheal Dyke.....	12 ..	13
256	Wheal Fortescue	6½..	5
2048	Wheal Frederick.....	2 ..	2
388	Wheal Franco	27 ..	30
128	Wheal Harriet.....	45..	50
256	Wheal Jane.....	21 ..	15
256	Wheal Louisa.....	8½ .	8
112	Wheal Margaret	79 ..	350
512	Wheal Mary Ann	5 ..	16
256	Wheal Mary Consols..	40 ..	26
210	Wheal Prospect	4 ..	7
120	Wheal Reeth	41 ..	150
128	Wheal Rose.....	60 ..	15
2048	Wheal Samson.....	¼ ..	20
99	Wheal Seton	214 ..	1000
250	Wheal Sisters	30½..	17
256	Wheal Sophia	5½..	10
128	Wheal Spearne	10 ..	75
128	Wheal St. Ann	9 ..	15
—	Wheal Trescoll	1 ..	12½
260	Wheal Trelawney	7½..	90
256	Wh. Tremaine(St. Ervan)	44..	20
256	Wheal Tremayne	35 ..	15
128	Wheal Trew.....	20 ..	21
256	Wheal Trevenna	3 ..	4
92	Wheal Tryphena.....	140 ..	265
242	Wheal Venland	29½..	30
256	Wheal Vlow (Perranz.)	½..	½
184	Wheal Vyvyan.....	— ..	60
256	Wheal Williams	6 ..	14

FOREIGN MINES.

5000	Alten Mining Company	14½..	2½
15000	Asturian Mining Co. ..	12 ..	4
20000	Australian	2½ .	3
10000	Anglo-Mexican Co....	100 ..	2
12374	Ditto Subscription	25 ..	2½
6000	Barossa Range	½ ..	2
3000	Bolanos	150 ..	3½
2000	Ditto Scrip	15 ..	3
12000	Brazilian Imperial	23 .	5½
10000	Cobre Copper Co.	40 ..	18
8500	Colombian Co. regis...	55	1
5000	Ditto Scrip	5½	
5000	Copiapo Mining Co....	14 ..	2½
10000	General Mining Ass'n.	20 .	12½
5000	Kinzigthal Mining Ass.	2 ..	4-4½
20051	Mexican Company....	59 ..	—
2000	Mexican & SouthAmer.	7 ..	1⅝
5000	Mocanbas & Cocaes ..	30 ..	4
29320	El del Monte, regis.	28½..	1½
	Ditto unregistered		
	Ditto Red Debentures	— ..	10
	Ditto Black ditto	— ..	5½
	Ditto Loan Notes	150 ..	60
7000	Royal Santiago	10 ..	6
2000	Pachuca Mines	4 ..	4½
11000	St. John del Rey	15 ..	7
13174	United Mexican ...Av.	28½..	1⅝

*** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

JOINT-STOCK BANKS.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
22,500	Australasia	£40	£3	£16
20,000	British North American	50	6	41
20,000	Colonial	25	5	9
—	Commercial of London.....	20	6	20 20½
4,000	Ionian State	25	6	24½ 25
60,000	London Joint-Stock	10	6	14
30,000	London and Westminster	20	6	21½
10,000	National Provincial of England	35	5	36
20,000	National of Ireland.....	22½....	5	17
20,000	Provincial of Ireland	25	8	40
4,000	Ditto New	10	8	15
—	South Australia	22½....	—	22
20,000	Union of Australia	25	6	22½
10,000	Ditto New.....	2½	6	2½ 2⅝
60,000	Union of London.....	10	5	10⅞

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Davison's West Hartley 14—Dean's Primrose 12 9—Hasting's Hartley 14—New Tanfield 13—South Pontop 12 6—West Wylam 14—Wall's End Bewicke and Co. 14 9—Gosforth 14 9—Hedley 14 9—Walker 14 6—Wharncliffe 14 9—Lambton Primrose 15—Hetton 16 6—Lambton 16—Stewart's 16 9—Thornley 15—Tees 16 6—West Hetton 14 6—Sidney's Hartley 14.—Ships at market, 75.

WEDNESDAY.—Buddle's West Hartley 13 6—Carr's Hartley 14—Dean's Primrose 12 9—Hasting's Hartley 13 6—Holywell Main 14—New Tanfield 13—Ravensworths' Pelaw 13 6—South Peareth 13 3—South Pontop 12—Tanfield Moor 14—Wylam 14—Wall's End Bewicke and Co. 14 9—Clarke and Co. 13—Framwellgate 14 3—Gosforth 14 9—Hotspur 13 9—Harton 14 9—Heaton 14 9—Riddell's 14 6—Eden Main 15 3—Lambton Primrose 15—Belmont 15 6—Braddyll's Hetton 15 9—Haswell 16 9—Hetton 16 6—Lambton 16—Murton 15 9—Morrison 14 9—Russell's Hetton 16—Shotton 15 9—Whitwell 14 6—Caradoc 15 9—Cassop 15 6—Hudson's Hartlepool 15 6—Thornley 15—South Durham 14 9—Tees 16 6—Cowpen Hartley 14—Derwentwater Hartley 13 6—Gwaun Coe Gurwin Stone 24—Llangennech 23 6—Sidney's Hartley 13 6.—Ships at market, 101.

AN IMMENSE VIADUCT.—We are informed that the viaduct, now in the course of erection at Brettell Lane, near Brierley Hill, on the Oxford, Worcester, and Wolverhampton line of railway, will extend nearly 300 yards, will take 3,000,000 bricks to finish it, and that two years is the time agreed upon for its completion.

LEAD ORES.

TICKETINGS FOR ABOUT 80 TONS LAXEY LEAD ORE.

Douglas, Isle of Man, April 15.

Tickettings.	*Price per Ton.*
Walker, Parker, and Co.—(purchaser)	£17 17 6
B. Somers	17 12 6
Newton, Keates, and Co.	17 5 6
Sims, Willyams, and Co.	16 0 0
Tamar Smelting Company	15 10 6

Sold at Holywell.

Mines.	*Tons.*	*Price.*	*Purchasers.*
Talargoch	111	£9 15 0	Walker, Parker, & Co.
ditto	41	9 15 6	J. P. Eyton.
ditto	22	9 15 6	ditto, Newton, & Walker
Milwr	10	10 3 0	Walker, Parker, & Co.
Hendre	30	9 12 0	ditto
ditto	42	9 17 6	Newton, Keates, & Co.
ditto	20	9 15 6	ditto
ditto	10½.....	9 13 0	J. P. Eyton.
Fronfuwnog	120	9 18 6	Walker, Parker, & Co.
Deep Level	60	9 17 6	Newton, Keates, & Co.
Nant-y-crea	17	8 18 0	Walker, Parker, & Co.
ditto	½.....	8 18 0	ditto
Total tons	....	484.	

Sold at the Mine.

East Wheal Rose.....	78	£11 11 0	Newton, Keates, & Co.
ditto	55	10 18 6	R. Michell & Son.
ditto	37	10 2 6	ditto
Total tons	....	170.	

Sold at Aberystwith.

Goginan	45	£13 7 6	Newton, Keates, & Co.
ditto	55	13 15 0	ditto
Frongoch	35	9 3 0	ditto
ditto	35	9 3 0	Walker, Parker, & Co.
Graigoch	26	9 0 0	Newton, Keates, & Co.
Total tons	....	196.	

Sold in London.

Cubert	20	£9 7 0	Walker, Parker, & Co.

Sold at Bagillt.

Peel	96	£9 15 6	Newton, Keates, & Co.
Carnaul	5	10 5 6	ditto
Total tons	....	101.	

*** We have been requested to correct an error in noting the sales of Shallee ore, in our last publication—they should have been:—

Shallee	30	£11 8 0	Newton, Keates, & Co.
ditto	5½.....	5 0 6	Walker, Parker, & Co.
ditto	4	7 3 6	Newton, Keates, & Co.
ditto	1½.....	4 12 0	Walker, Parker, & Co

COPPER ORES.

Sampled April 5, and Sold at Andrew's Hotel, Redruth, April 20, 1848.

Mines.	*Tons.*	*Price*	*Mines.*	*Tons.*	*Price.*
Devon Gt. Cons. Wh. Josiah ..	140	£5 18 6	Fowey Consols ...	102.....	£5 10 0
ditto	132	6 8 6	ditto	95	5 12 0
ditto	120	7 9 0	ditto	78	5 4 0
ditto	93	6 14 0	Marke Valley	90	1 18 6
ditto	70	7 2 6	ditto	65	1 16 6
ditto	45	8 12 6	ditto	60	2 0 0
Wh. Fanny . ..	98	4 4 6	ditto	26	1 18 6
ditto	89	4 18 0	Wh.

NOTICES TO CORRESPONDENTS.

It will at all times save much trouble, and frequently considerable delay, if communications are simply directed—

To the Editor,
Mining Journal Office,
26, Fleet-street, London.

Also, to avoid trouble, Post-Office Orders should always be made payable to William Samson Mansell, as acting for the proprietors.

*** We should feel obliged to all pursers, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal with as little delay as possible.

We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses; not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

The Mining Journal is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

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A Glossary of Mining and Smelting Terms,

USED IN ENGLISH AND FOREIGN MINING DISTRICTS.

Published at the office of the *Mining Journal*, 26, Fleet-street, London; and may be had of John Weale, 59, High Holborn; and through all booksellers in town and country.

Errata.—Sir: I wish to call your attention to some errors which crept into my letters of last week.—T. Craddock: *Birmingham, April* 20.
"Our Steam Navy," &c.—3d parag., 20th line, *for* insoluble problem, *read* insolvable problem.
"Patent Law Reform."—1st parag., last line, *for* beneficent influence, *read* beneficial influence; 2d parag., 10 lines from bottom, *for* inventions, *read* inventors; ditto ditto, *for* not specifically, *read* not specially.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, APRIL 22, 1848.

In the House of Commons, on Monday last, the long-mooted and much-discussed question of the repeal of the duty on foreign copper ore, was brought forward by the Chancellor of the Exchequer, moving the order of the day for going into committee on the bill. Sir C. Lemon moved "for a select committee, to inquire into the effect of the existing duties on the importation and production of copper ores." Sir Charles acknowledged, that these were not times to stand up for protection to any class, to the injury of the community at large, but he maintained, that these duties were not injurious. He opposed their repeal as a question of revenue, contending that at present it was imprudent to give up even 50,000*l.* a year. After a considerable debate, in which Messrs. Wyld, Muntz, Carew, Labouchere, Gladstone, and other Members connected with the copper trade, took part, the motion of the Chancellor of the Exchequer was carried by a majority of 102 to 35.

So far as regards the operation of this tax on our manufacturing industry, the advocates of free trade have gained another victory; and we have little doubt, that ere another year has elapsed, the benefits accruing from this measure will be sensibly felt by both the miner and manufacturer, in a greater importation of rich foreign ores—a more brisk demand for those of Cornwall and Devon—and a large extension of our copper exportation to all the markets of the world. Supplied to repletion, as this highly-favoured island is, with all the elements necessary for conducting the smelting process with economy, in bringing the ore to the coal, rendering us invincible to competition by those who have to bring their coal to the ore, this measure will eventually prove one, the most important to the miner's welfare, and also secure a return of those customers for our general exports, which had considerably fallen off since the adoption of the tax in 1842. In a political sense, however, we are not so satisfied; the old Whig leaven still lurks in the present Government system, and instead of boldly sweeping off the entire duty on foreign ore, and thus saving all expense of collection, the Chancellor of the Exchequer has reserved the paltry sum of one shilling per ton on copper and regulus, and two shillings and sixpence per ton on the several descriptions of metallic copper, for no other earthly reason, it is morally evident, than keeping up the patronage arising from the continuance, in all its full-blown plethora, of a large customs establishment; while it is clear, that these insignificant duties can never pay for the expense of their collection. How humiliating is it to see men, to whom is confided the helm of the State, in a great commercial country like England, incapable of adopting great measures; but when assailed by a pressure from without, for a radical change in some law, which, from the altered circumstances of the country, is absolutely requisite, come forward with some chandler's-shop measure, displaying their own imbecility, and showing that they reluctantly give way to the alteration, more from force, than conviction. Mr. Gladstone, however, has given notice of a motion for admitting the whole, duty free; and when such comes on for discussion, we shall have an opportunity of judging of the motives which induced the adoption of the paltry subterfuge.

A theory has recently risen into some considerable notice among our theoretical neighbours on the southern side of the Straits of Dover, called the *organisation of labour*. The doctrine rests on the supposition, that it is possible, by a statutory regulation, to lessen the quantity, and, at the same time, to increase the remuneration of that very popular element. We wish it were possible, by any legislative effort, to accomplish these desirable ends—to work out this double blessing; but we have historical and contemporary evidence and reason for believing, that it would overtask the power and the wisdom of any senate—past, present, or to come—to realise such objects by any direct and legal exercise of its assigned functions. Labour must, at all times, and in all places, submit to the law applicable to it as a social entity. So long as the world lasts, labour will be cheap where its amount exceeds the necessities of the place, and dear where it comes short of it. We err foolishly when we attempt to interfere with a law of physics; and not less foolishly when we interrupt a primordial law of our social constitution. It is a law of this kind that consigns labour and its remuneration to its true value in the public market; founded on any other basis, or standing on any other stilts, its fall would be certainly rapid, and probably ruinous. We began, a session or two since, to meddle legislatively with this element of labour, by passing what was called the Short Time Bill; and we believe the consequences of that measure are not of such a nature as to justify Parliament in taking a single step further in that direction. Notwithstanding the manifest inexpediency of a direct legislative intemperance, we think there are several secondary and indirect means open to the Legislature of ameliorating the material condition of the labouring classes. A better assessment and distribution of the taxes necessary for the maintenance of the national engagements, and the carrying on of the public service, is one. Another is the cheapening of that class of miscellaneous articles which enter into the thousand daily wants of the working families of the kingdom—in short, by several subordinate and indirect measures, by which the chief burthens of the State may be borne by the luxurious and the wealthy, and the operative working classes might be lightened of their pressure. By such a circle of expedients, the circumstances and the ease of our laborious countrymen, could be, and ought to be, lifted up and enlarged. In fact, we regard this question of labour as one of those cases which does not admit of a direct and topical treatment. It must be met—if met at all—by palliatives cautiously applied, or by stimulants indirectly and gently administered. This must in substance be the course adopted, unless, by the surplus vigour of our remedies, we contribute to the introduction of a disease more serious than that of which we are attempting the removal. If we grasp the pillars with the strength of Samson, we may be overwhelmed with the same destruction.

It will be seen by an advertisement, which appears in another column, that the anniversary festival of the Iron, Hardware, and Metal Trades' Pension Society, comes off on Wednesday next, when, judging from the list of stewards—being upwards of sixty in number—the meeting being presided over by the Right Hon. the Lord Mayor, and the increasing interest manifested in carrying out the highly praiseworthy objects for which the institution is formed, we trust that the number who may attend the festive board in the aid of charity will be found to surpass that of any former occasion. The appeal made by the society will, we feel well assured, be nobly responded to, and fully justify the confidence entertained, in ready assistance being afforded by those whom it has pleased Providence to place in a sphere which enables them to exercise that kindly duty towards their fellowmen, of relieving distress.

Amid all the tumults and revolutions which, during the past few weeks, have shaken continental Europe almost to its very centre, we cannot fail to be deeply impressed with the devoted loyalty and patriotism which have been displayed in our favoured isles, and which still so strongly characterise our fellow-countrymen. We have always been accustomed to hear England called the "land of liberty," and assuredly it has been well proved to be the only land on which the exiles of all the world besides can find rest and safety from their enemies. Here alone are "liberty, equality, and fraternity" enjoyed in their true sense—and, indeed, in the only sense in which they can be enjoyed. As long as foreigners conduct themselves properly, and pay due respect to our laws, they are allowed to remain in full possession of their liberty, and have the same protection from the state as a British subject. We do not, however, think it necessary to enlarge on the great advantages of the British constitution, but we wish to say a few words on the opportunity which we possess at present for extending our commerce. The commotions in other countries must affect, to a great extent, mercantile operations. We find that, in France, credit is almost entirely paralysed. Of all the countries of Europe, to England alone can America, with confidence, send her produce; and, on the other hand, English capital is alone available for the ordinary wants of commerce. The few evil-disposed persons who would wish to see us in the same deplorable position as France is in at present, are evidently not aware of the injury they are endeavouring to bring upon themselves. Let England but keep quiet, and not interfere in the affairs of other nations, and she must, of necessity, profit very considerably by late and passing events. We would, therefore, encourage every attempt to extend our commercial operations, and particularly when it is likely to lay the foundation of a permanent source of benefit to this country.

It is with much pleasure that we have lately noticed the formation of a company, under very favourable auspices, for the extension of commerce in the China seas, and for promoting the civilisation of Borneo, &c. The company, to which we have before alluded, is the Eastern Archipelago Company: it has obtained a Royal Charter, and is, we understand, viewed with considerable favour by her Majesty's Government. Indeed, when we mention that the chairman of the board of directors is Mr. Macgregor, M.P., the late Secretary of the Board of Trade, we need scarcely dwell at any length on the prospects of the undertaking. The objects are to carry on mining, agricultural, and trading operations in the Eastern Archipelago, and the acquiring and disposing of lands in the island of Labuan, and the parts adjacent—a region abounding in mineral wealth, most fertile in all the valuable tropical productions, and very happily situated for the purposes of commerce.

Our readers are aware, that the island of Labuan has been formally taken possession of by the Crown of Great Britain, and that a treaty has been entered into with the Sultan of Borneo, by which many highly important advantages are permanently secured to this country. A circumstance which is pregnant with highly beneficial results to this company, and through it to other great interests, is the important discovery of an abundant supply of excellent coal on the main land of Borneo, in the immediate vicinity of Labuan. A formal grant of this coal, extending through a district of about 150 miles, has been obtained from the Sultan of Borneo, and is, with the approval of her Majesty's Government, now held by Mr. H. Wise, with whom arrangements for its working will be made. We shall take another opportunity of referring to this important undertaking.

Improvements in Iron Manufacture.—Among the various improvements in the working of iron, which have been patented within the last few years, more particularly with a view to obtain a strong, tough, and elastic material for railway axles, wheel tires, and other parts of machinery where great shocks are unavoidable, we observe a patent has been taken out in England by Mr. G. Witherell, of New York, for a machine for manufacturing iron under various forms, and imparting to it a twist, by which the fibre is laid in a spiral direction instead of longitudinally, as hitherto has been done. By this means, the iron is rendered more available for resisting abrasion, and all other such forces as are destructive to the fibre. Hitherto iron has been made to pass through rollers, in reference to the direction of the fibre, parallel. In this operation, the patentee gives the iron the necessary twist, and afterwards hammers, rolls, or otherwise works it into form by heat, in the usual manner. The machine consists of a powerful bed-plate, with proper standard bearers, for carrying the working gear. This consists of a pair of common rollers, through which the bar to be twisted first passes. Directly opposite these are another pair of rollers of the same dimensions, and with the grooves through which the bar passes of precisely the same size. These last-mentioned rollers not only rotate on their own axes, but they, with the frame and gearing in which they work, revolve in a vertical direction; and as the bar of iron is forced or drawn through both pairs of rollers, the latter, by their joint-vertical motion, in addition to their own rotation, twist the iron into a form precisely similar to that of a wire rope, after which it may be worked up into any form in the usual manner. Its fibre and texture will be found similar to a twisted gun-barrel, and its tenacity and toughness greatly increased. It would be impossible to describe the whole of the gearing by which this double motion is given to the rollers without diagrams, but the above is a general description of the operation. We have seen samples of the iron made by the machine—one a round bar, about 5 in. in diameter, for a piston-rod, and another for a tire to a locomotive wheel; this latter being polished and bronzed, shows the fibres to lie in contortions similar to those in a good gun-barrel.

Monmouthshire Canal Company.—The committee, before whom the vexed question at issue between the freighters and the above company, by the proposed Act, to amend the one passed in 1845, has to be submitted, will consist of the following Members of the House of Commons:—Sir R. Peel, chairman, Admiral Gordon, Capt. F. H. Berkeley, Alderman Thompson, Mr. Beckett. The last-named gentleman was chairman of the committee, who passed the bill in 1845. A better set of business-men could not have been selected

Western Australia.—By the schooner *Ware*, which left the western colony on the 29th Sept., and arrived on Thursday, we have Perth files extending over a period of nearly six months. The reality of the coal discovery is satisfactorily confirmed, Dr. Von Sommer's search for metallic minerals has been partially rewarded, by the finding of some very rich zinc ore. The sandal-wood trade is flourishing, and the increase of flocks and herds is very satisfactory. Cattle and sheep were being exported to the Mauritius, and it was intended to make a shipment of sheep to Singapore. The chief want of the colonists is a supply of labour.—*Adelaide Observer*, Oct. 30.

Chikiswalungo Iron Furnace, near Columbia.—This furnace is 32 ft. high, and 8 ft. greatest diameter; it is driven by a 40-horse power engine. The bellows is 60 in. in diameter, its stroke 5½ ft., and its crank makes 14 revolutions in a minute. It was built as a "40 ton" furnace, but, owing to the constant attention and the theoritical knowledge of my brother and partner, Dr. E. Haldeman, the average product is 65 tons a week. The following table exhibits an unusually good week's work; although, if scrap iron had been used with the ore, the result would have been one or two tons more. Anthracite coal and a hot-blast are used.

1847.	Charges.	Coal.	Ore.	Limestone.
Sept. 26	37	900=33,300 lbs.	1400=51,800 lbs.	425=15,725 lbs.
27	36	900=32,400 „	1400=50,400 „	425=15,300 „
28	36	900=32,400 „	1500=54,000 „	435=15,660 „
29	37	900=43,300 „	1500=55,500 „	439=16,095 „
30	36	900=32,400 „	1500=54,000 „	435=15,660 „
Oct. 1	36	900=32,400 „	1400=50,400 „	425=15,300 „
2	36	900=32,400 „	1400=50,400 „	425=15,300 „
		228,600	365,500	109,040

228,600 lbs.=102 t. 1 cwt. 0 qr. 8 lbs. 365,500 lbs.=163 t. 12 cwts. 1 qr. 8 lbs.
109,004 lbs.=48 t. 13 cwts. 2 qrs. 8 lbs.—Result of the above, 72 tons pig metal.

To explain the above.—On the 26th September the furnace was filled 37 times, each charge containing 900 lbs. of coal (making 33,300 lbs. in the 24 hours), 1400 of ore ("Chesnut Hill" hematite), and 425 of flux. The engine consumes 40 tons of coal a week, not taken into the above account; but we intend to make such alterations in the spring as will cut off this expense. When a furnace is blown in, the hearth and stack being cold, the 10 first days are counted as a week's work. Here follows the result of such a week (of but eight days, however), ending with the 30th of October last.

	Tons.	Cwts.	Qrs.	Lbs.
Coal	98	8	3	00
Ore	127	2	3	12
Flux	41	19	2	21

Result, 43 tons (gross weight) of pig metal.

S. S. Haldeman: *Silliman's American Journal of Science.*

Ayrshire Iron Company.—A general meeting of the proprietors of this company was held at Carrick's Hotel, Glasgow, on Wednesday, the 12th inst.—James Watson, Esq. in the chair—when the report of the committee was read, describing their proceedings since the last general meeting, in making arrangements for paying 10s. in 1*l.* to the creditors, which was accomplished, and they had given their acceptances at six and twelve months for the remainder. They had come to the resolution of blowing out the furnaces, and stopping mining operations, except five pits, which would suffer much injury by standing. These limited operations have required an outlay of 1100*l.* per month; against which, there is an accumulating stock of ironstone on the ground, at present, amounting to about 40,000 tons. They were in hopes of curtailing these operations, and further reducing the expenditure. The report recommended, that the committee should be authorised to advertise the works for sale by public auction; and, by the advice of counsel and the law agents, it appeared prudent to dissolve the company, and the committee recommended that meetings be called to carry the same into effect. The chairman said, that at a former meeting the debts against the company were 236,719*l.* 14s. There were bills receivable, 68,692*l.* 3s. 6d.: debts due by the Blair Iron Company, 12,000*l.* or 13,000*l.*; blank bills left in the hands of Mr. Alison; and, altogether, they were in an awkward position, and did not know what might come against them. He was happy to say, they then stood in a much improved position; the bills had been run off with a loss not exceeding 2400*l.*; the blank bills, and unfinished iron contracts, he thought they had seen the worst of; and they now knew the claims which would be made against them. The whole sum paid by the committee, amounted to 110,848*l.* 4s. 10d.; and the bills for the payment of the remaining 10s. in 1*l.*, at six and twelve months, was 92,000*l.* There were still claims, of from 6000*l.* to 8000*l.*, to be added, which were under adjustment; and all sums under 100*l.* had been paid off, deducting 10 per cent. The committee had found the works very expensive, and had considered it necessary to put the furnaces out of blast; they had not offered them for sale until the price of iron rose to 47s. per ton; and, he had no hesitation in saying, that had it not been for the French revolution, and had trade continued to improve as it had done, they would have had a very handsome offer for the works. He was happy to say, that, notwithstanding the miserable state of the money market, he had met with a person who offered, if he met with others willing to do the same, to join for the purchase of the works. The committee had made equalising calls of 20*l.* per share; and if this was met with anything like promptitude, they were perfectly safe. He had no fear whatever, but that the call would be met, and the claim regularly paid, and he believed their credit would remain unimpaired to the last. Heavy as their losses were, times would change, and they would find some way or other of making up the losses which they had sustained. He could only assure them that everything was done, and everything would be done, to lighten the matter in every way possible to the shareholders. Resolutions were then passed, approving of the report; thanking the committee for past management, and granting them powers to dispose of the works. A vote of thanks was passed to the chairman, and the meeting broke up.

East of Scotland Malleable Iron-Works.—The first production of a mass of malleable iron was witnessed at these works, on Saturday, the 8th inst. Though this undertaking is carried on with the greatest spirit, and now nearly completed, we had no expectation of seeing such a result so soon; and, by the month of June, we understand they will daily be turning out tons of splendid malleable iron. The mass was the first production of malleable iron in the kingdom of Fife; it was the trial of a puddling-furnace, in which the iron is converted from the cast to the malleable state. This furnace is of peculiar construction, and produces the most intense heat, by which the crude pig-iron with which it is charged is not only melted, but actually boiled, whereby all the impurities are separated from the mass, like scum in a cauldron. The workmen puddle, or roll, the liquid mass into large balls. As soon as the first "heat" of the furnace was taken out, the workmen seized a large ball with a monstrous pair of tongs, and placing it on a temporary anvil, it was speedily beat up into a square bar, or "bloom," by a ram wrought by a number of men, as the engine for doing this is not yet ready. The furnace was said to work very well, and five large balls were drawn out in succession, and beat up into blooms, the last of which was taken to the smithy, and with the same heat forged into a hammer, had an eye punched into it for the handle, and was pronounced by the workmen to be a piece of very good iron; it weighed 67 lbs. It is a matter of congratulation to the shareholders that their works are in such a state of forwardness. From the superior quality of the coals in this neighbourhood, from the choice of markets for pig-iron, and the having machinery of the very best construction, they may reasonably expect a large return for their capital.—*Fifeshire Journal.*

Locomotive Engine Blast-Pipes.—It has always been considered that the best method of producing that degree of blast through the furnace and tubes of a locomotive engine, which is necessary to keep up the required quantity of steam, is by means of the exhaust steam from the cylinders. This, however, will be found to be contrary to fact, as the following statements, based upon direct experiment and well-known and established principles of action in daily operation, fully prove:—1. The blast produced by the exhaust steam really and virtually consists of a number of distinct and successive impulses, which are by no means equal in effect to one continuous draught, such as is produced by a jet of steam taken direct from the boiler, by a pipe either inserted into the boiler itself, or into the steam-pipe for conveying the steam from the boiler to the cylinders, which is attended with this further advantage, that the engine-driver has it always in his power to regulate the blast according to the requirements of the engine for the time being.—2. The pressure required to be sustained by the boiler is less when the jet is employed for this purpose instead of the exhaust steam, which is certainly an important consideration, in so far as the pressure is reduced, and the tear and wear of certain important parts of the boiler and engine are also correspondingly reduced. Or, if it should be desired to work with the same pressure of steam in the boiler, there will be a great effective power of the engine at command. Let us suppose that it takes the same quantity of steam to produce equivalent degrees of blast, whether the steam used for this purpose is passed through the cylinders, or by a jet-pipe from the boiler; if the steam be passed through the cylinders, the blast is produced by throttling the exhaust-pipe to an extent varying more or less from 3½ lbs. to 5 lbs. on the square inch, which will, under the most favourable circumstances, as to form and size of steam passages, produce a back action of 3½ lbs. or 5 lbs. on every square inch of the piston, to be deducted accordingly from the effective power of the engine. Mr. Josiah Parkes has estimated this back action at one-fifth, or one-fourth, of the whole power of the engine. On what grounds he has come to that conclusion I am not aware; but it must be very near the truth, because the throttling of the exhaust takes place at the very point of escape, which must oppose an increased friction to the issue of the steam through the steam passages and ports; so that, while the indicated pressure of steam from the nozzle of the exhaust-pipe stands at the lower number of 3½ lbs., it will produce a back action of 5 lbs., or even more, upon every square inch of the piston. If, on the contrary, the blast be produced by a jet-pipe, then the exhaust may be of the finest possible kind, and, perhaps, instead of being projected into the chimney, where it would only impede the draught, it would be better to discharge it by a pipe placed immediately in front of, and close to, the chimney.—3. The superiority of the jet, as compared to the exhaust-blast, is greatly enhanced, from the diminished risk there is of setting fire to the goods train, or other property situated on the line of rail, the loss from which forms no unimportant item in the expenditure of some lines.—*Mechanics' Magazine.*

Swansea Patent Fuel Works.—These extensive and important works are fast drawing to a state of completion. The machinery, constructed under the superintendence of Mr. Middleton, of London, were in partial operation last week, and, as far as the experiment was tried, we are informed it worked with admirable precision, and gave general satisfaction. The works are expected to be in full operation in a very short period. A large number of men is now employed, and great exertions are being made to get the establishment in working order as soon as possible.—*Cambrian.*

GEOLOGY AND MINERALOGY OF THE MALAY PENINSULA.

The little that is known of the physical geography and geology of the peninsular of India renders the most general information of the greatest interest. The knowledge of this immense tract, extending over 83,000 geographical square miles—the interior of which is almost untrodden ground, at least to European foot—must depend on future exploration; but any information, even of its coast line and bounding islands, is of importance, and tends to incite to further observation. Its western coast is remarkable for the great number of islets which skirt it; a broad and almost uninterrupted belt extends along all the western side of the isthmus. Some of these are remarkably bold and imposing—such as the Johore Archipelago, and the Redang Islands. The concave southern half embraces the Island of Singapore; and an archipelago of several hundred miles, stretching south-east by south, marks that the peninsular zone has not yet wholly sunk beneath the sea, and attests how nearly a junction with Sumatra has been accomplished. Most of the islands are bold; and one of them (St. Matthew) rises to the height of 3000 ft. The isthmus itself is occupied by numerous high hill ranges, which have the same general southerly direction. Along the sea borders, considerable tracts of flat alluvial land occur—the best known of which is the large plain of Tenesarim. From Junk-Ceylon to the Langkawi group, the coasts of the mainland and islands, exposed to the full force of the Bengal Sea, are broken, and frequently rocky and precipitous. The high and perpendicular limestone rocks, with their deep excavations, pillared with colossal stalactites, and with their summits crowned with dense forest, present the most magnificent scenery. The Island of Penang is a bold mountain mass, rising, in some of its northerly summits, to a height of nearly 3000 ft., and contrasting nobly with the broad and beautiful plain which lies opposite to it, on the mainland. Geologically, the peninsular may be considered, when divested of its alluvial fringes, as one continuous belt of mountains and hills, separated from the Hindu-Chinese region in lat. 13° 30′ north. We find that the broad tract, stretching to the eastward towards Siam, Cambodia, and Cochin-China, with which the peninsular zone is amalgamated, is not a uniform elevated continental mass in which the peninsular merges, as the Straits of Malacca lapse in the Sea of Bengal. The zone of elevation continues uninterruptedly—the western border being a broad sheet of alluvium; beyond this alluvium, another elevated zone occurs, succeeded by a second tract of alluvium, which again is bounded by a third elevated belt. How far to the north these great alluvial plains extend, and how much the northern limit of the Malay Peninsula has been pushed south by the gradual filling up of the northern part of the Gulf of Siam, we have no authentic knowledge. The strata is principally plutonic; but considerable masses of sedimentary rocks occur, consisting of limestones, sandstones, common clays, and shales. In the famous tin island (Banca) the prevailing stratified rocks are clays and sandstones. In many cases plutonic action has indurated the superincumbent strata, converting sandstones into compact siliceous rocks and clays, and conglomerates into schist and other hard crystalline forms. In Malacca are several thermal springs, affording evidence that, at subterranean levels, the intumescence which produced the peninsula has not yet parted with its heat. This, combined with some proofs of recent upheaval, leads to the surmise that it still retains the character of a rising region—a surmise which its proximity to Sumatra countenances.

Metals.—The tendency to the production of metalliferous ores at and near the junction of plutonic and sedimentary rocks, which has been observed in many countries, might have led us to anticipate a large share of metallic riches for the peninsula. In reality, it probably abounds in some ores far beyond conception.

Iron ores are every where found, and in the south they exist in vast profusion. In some places the strata have been completely saturated with iron; and here the bare surface of the ground, strewed with blackish scoriform gravel and blocks, presents a strange contrast to the exuberant vegetation of surrounding tracts, appearing as if it had been burned and blasted by subterranean fires. Much of the ordinary forms of ironmasked rocks, which are so common, and so little regarded for their metallic contents, that in Singapore they are used to macadamize the roads, contain often nearly 60 per cent. of pure metal.

The whole length and breadth of the peninsula, there can be little doubt, abounds in tin ore. The uniformity, we might almost say unity, of its plutonic character, warrants the inference that ores, found plentifully in many different and distant localities where they have been sought for, exist also in the intermediate tracts which have not yet been examined. At the two extremities of the peninsular zone of elevation, Junk-Ceylon and Banca, tin sand is diffused in such quantity that its collection has never had any other limit than the number of persons employed in it. In Junk-Ceylon and Phunga, under a barbarous government, about 13,000 piculs are annually dug out of the soil. In Banca, under a European government, but without any improvement on the usual Chinese mode of excavating, washing, and smelting, the production has increased from 25,000 piculs, in 1812, when it was a British possession, to 60,000 piculs.

At numerous intermediate localities throughout the peninsula tin is obtained; and when we consider the despotic, rapacious, and, too often, remorseless character of the native governments, the consequent failure of all attempts to introduce European or Chinese capital and system into the tin mining, and the robberies and massacres which, from time to time, terrify and scatter the little communities of needy Chinese in whose hands it has remained, the wonder is, that so much metal should find its way to the market. In the Siamese countries north of Kedah, and in Kedah itself, which has been so long in a state of anarchy, it is sparingly extracted. From Perak 9000 piculs per annum was formerly exported, but the produce has now greatly diminished, owing to the miserable state of the country. Salangor and the adjacent inland states, yield about 1000 piculs. The eastern countries from Kalatan to Pahang yield about 11,000 piculs. The present produce of the whole peninsula, including Sinkep and Linga, the only two islands of the Johore Archipelago where it is now sought for, is probably above 40,000 piculs. The produce for many years past has ranged between that quantity and 30,000. The peninsular range, therefore, including Banca, yields upwards of 100,000 piculs, so that it equals, or exceeds, that of Cornwall (6000 tons), and may be expected to increase steadily.

Seeing that tin is procured in all parts of the peninsula where it is sought for, and, in porportion to the enterprize and labour which are devoted to the search, we may consider the entire zone as a great magazine of tin. It is, in fact, incomparably the greatest on the globe. Johore might have seemed to offer an exception to the apparent universality of the distribution of oxide of tin, if its geological affinity to Banca, the fact of tin having from time to time been found in several places, and for many years having been got in considerable quantity in Malacca, had not afforded the strongest presumption that its want of inhabitants and government was the cause of its nonproductiveness. The last eighteen months, however, have placed the matter beyond doubt, and given a striking proof at once of the metallic fertility of the country, and of the little attention which this branch of industry has hitherto met with in the British settlements. In 1845, Malacca, an integral part of Johore, and having the same geology as the rest of the country, produced about 450 piculs of tin. In the succeeding year the interest of some Chinese of capital was excited in the subject, and more vigorous and extensive operations were commenced. In 1846 above 1400 piculs were procured, the greater part from 39 pits in one valley. In 1847 the produce appears to have been from 4000 to 5000 piculs. In 1848 it will probably rise to between 5000 and 7000 piculs, for the government tithe upon it for the year has been rented for the unprecedented sum of 8190 Sp. dollars; the revenue from this source having been, in the two preceding years, $ 1020 and $ 3345 respectively.

Nothing can better show how entirely the metalliferous character of the peninsula has escaped the mining enterprise of private European capitalists, than the fact, that in the Island of Singapore, where we have a line of junction between plutonic and sedimentary rocks, of above 20 miles in length, where tin was found in former years in at least two localities—and where the same iron ore, with which it is associated in Banca, abounds both in the igneous and aqueous rocks—no interest has ever been awakened in the subject. In the peninsula and Banca, tin has hitherto been procured by digging pits in alluvial tracts where the ore is found, generally intermixed with quartz particles, in a state resembling sand, varying from fine to coarse, and may properly be considered stream ore. Large specimens are found with the ore, adhering to, and partially invested with, quartz. We are not aware, that it has ever been actually seen in the solid rock in the peninsula, but in Banca it is found associated with iron ore in veins in the granite. A Dutch writer also describes whole layers as occurring in some mountains, which consist partly of granite, but in the centre principally of layers of sandstone and quartz, in which iron ore also appears. In the more purely granitic mountains, it seems to have been observed in quartz at the junction of the granite, with the iron-veined sandstone strata. In the Isthmus of Krá, it has also been found at the junction of sandstone and granite. In Cornwall, it appears to be dependent on granite.

The finest ores of Banca yield as much as 80 per cent. of metal—the common sorts from 40 to 60. The quality of the peninsular ores has not been ascertained so carefully; we are not aware that more than 70 per cent. has been ever obtained.

We have dwelt, at some length, on tin, because it is the principal natural production of the peninsula, which derives from the fact of its being the greatest stanniferous tract in the world—an importance, economically, which has never been sufficiently appreciated. We are able to state confidently, that the geological conditions, which seem to be necessary for the production of tin in this part of the world, are found in the peninsula as fully developed as in Banca. Both portions of the zone have been equally affected by, and have, indeed, originated in, one and the same igneous action, of which one of the phenomena has been the formation of tin ore. The existence of tin in Banca was unknown until 1709, when it was accidentally discovered. Now its produce doubles that of the peninsula, although the latter has a surface 18 times larger. The reason is not a mineralogical one: it is because in Banca the Chinese are stimulated, furthered, and protected, by a strong Government, which directly interests itself in their operations.

Gold is found in the peninsula, but whether from inferiority of enterprise, or natural deficiency, not in such abundance as in those parts of the adjacent countries of Sumatra and Borneo, where it is systematically dug for. The present annual produce is probably about 20,000 ozs. In all the larger specimens which we possess, or have seen, it is disseminated in small particles, and streaks in quartz. Like the tin ore, it has not been seen in the undisintegrated state. Copper, silver, and arsenic, have been detected in Banca, but apparently in small quantities

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LIABILITY OF MINING ADVENTURERS.—An important question was decided at the Truro County Court, last week, in the case of Harvey *v.* Toby. It was an action to recover money paid by the plaintiff, as purser of Wheal Tehidy, for the defendant as an adventurer. The mine was proved to have been suspended, and the materials sold, in 1842, pursuant to a resolution in the cost-book. In 1844, notice was sent to the defendant of a meeting of the adventurers, for considering the propriety of re-working the mines, or of giving up the sett, and it was then determined to work the mine. Other notices were also sent to the defendant, but no assent on his part to discontinue the mine, or to its re-working, was proved; and the question for decision was, whether a person who had been an adventurer in a mine that had been discontinued, and the materials sold, and which was afterwards re-worked, could, without his express consent, be considered an adventurer in the new working. The Court was of opinion that such assent was necessary, and a gave verdict for defendant.

SILVER SMELTING IN SPAIN.

It is an indubitable historical fact that, during the occupation of Spain by the Romans, immense mineral wealth was drawn by them from that fertile and productive province; and many remains are yet existing of their old workings and furnaces. The production of silver was so great, that Strabo, who was contemporary with Augustus Cæsar, informs us that, when the Carthaginians took possession of Spain, their domestic and agricultural implements were of that metal. During the occupation of the country by the Moors, the mines were partially worked; but the intestine divisions between that race and the Christians, prevented their ulterior development. On the expulsion of the Moors, in the 15th century, by Ferdinand and Isabella, the mines were again commenced; but the discovery of the Americas, and consequent abundant flow of the precious metals from those parts into the mother country, caused their abandonment, and they remained deserted until within the last few years. During the last European war, the colonies having thrown off their allegiance to the Spanish crown, and subsequently achieved their independence, the inhabitants of Old Spain, who were deprived of their resources from these quarters, were induced to turn their attention to their own much-neglected mineral deposits. There cannot be a question but that there is a wide field for enterprise in the Iberian Peninsula, and there is no doubt the metallurgical wealth there deposited, in less disturbed times, will receive that encouragement and attention which it appears so well to merit.

The following statistical returns, published by the General Inspection of Mines, of the amount of silver produced at the several Government works, during the months of January and February, in the present year, show the importance of this branch of Spanish mineral industry; and there is no doubt, with a more economical system of working, and the use of the improved processes, that it will become a source of considerable profit and addition to the now declining revenue of the country.

Number of Smeltings and Quantity of Silver obtained during January and February, 1848.

Name of Works.*	Number of Smeltings. January.	February.	Quantity of Silver obtained. January.	February.
Carmelita	1	2	*Mks.* 2416 6	*Mks.* 3212 6
Tres Amigos	1	1	830 0	475 0
San José	2	2	637 0	1069 0
Virgin del Pilar	2	2	712 0	748 0
Concepcion	1	2	452 2	1108 0
Union	1	2	421 6	1120 1
Encarnacion	0	2	—	1817 2
San Jorge	0	2	—	1745 5
Orcelitana	0	2	—	362 6
San Isidoro	0	1	—	81 2
La Constante†	3	0	1451 3	—
Total	11	18	6911 1	11,739 6

Making a total of 18,650 mks. 7 ozs. produced the two first months of the year, which, at the average rate of 4s. 6d. per oz., will be of the value of 38,571*l.* 11s. 6d.

By a decree on the 3d March last, the Spanish Government have imposed the following duties of sulphur imported into Spain in national bottoms:—

Sulphur in a mineral state	15 reals=3s. 1½d.	the quintal.
„ in forms, or cakes	22 17 mavrides=4s. 9d.	„
„ refined, or flour of sulphur	30 0 „	=5s. 6d. „

A further duty of one-third will be levied on all imported overland, or in foreign bottoms.

PERUVIAN COPPER.—The export of copper from Arica amounts annually to from 20,000 to 25,000 cwts. of ore, and 3000 to 4000 cwts. of smelted copper in pigs. This copper is brought chiefly from the province of Corocoro, in Bolivia, where the mines have been long worked, but did not yield largely until 1836, since when they have been worked on account of French houses. Copper is usually found in Peru, in veins more or less rich; in Corocoro, however, it appears in the shape of beds, lying parallel to the strata of the earth, in which the metal is intermingled largely with chalk, generally white, but sometimes red and green, a phenomena that is connected with the origin of the Cordilleras. It is to be observed, that the copper is found only among the white chalk, and is commonly found in a pure state, especially in the lower strata, of a dark red or clear brown; and frequently, when containing arsenic, of a dirty white colour, almost like silver.

GAS IN NORWAY.—Our readers may not be aware that illumination by gas has reached this remote country; and it is curious to observe the high prices obtained there, while in England the gas companies in nearly every instance are lowering their demands. On the 1st of January last, Christiania, the capital, a city containing about 35,000 inhabitants, was partially lit by an English company, who have obtained a contract from the municipality for 30 years, at the rate of 5s. per 1000 cubic feet for the public lamps, and at 9s. for the private consumers. Further, the contract, should the company demand it, is to be prolonged 15 years, on a reduction of 10 per cent. in their prices. The magistrates have the option, at the expiration of this period, of purchasing the gas-works at the market value of the shares. The contract for the erection of the works is to be completed at the close of the present year (1848). There are 300 public lamps; and about 3000 lights will be required in the different public buildings; already over 200 private consumers have been obtained, and about double the number are confidently expected by the close of the season; the average of the private consumers is about 4 lights each. The wet meter is used; the company have the exclusive privilege of supplying gas-fittings to the inhabitants; and all materials for the use of the establishment, excepting ornamental chandeliers, are admittted duty free. The coals, which are the Silkstone Main, are delivered on the premises for about 17s. per ton. One 40-ft. gasometer and five retorts are in active operation. Mr. James Malam, of the Whitby and Huntingdon Works, is the engineer and contractor. By a judicious arrangement of the service-pipes and the syphon-boxes, the difficulties arising from the climate have been entirely overcome. This invention of Mr. Malam's, which, we understand, it is his intention to patent, has effectually protected the gas-pipes, and other apparatus, from the action of the frost, when at the intense cold of 22° of Reaumur.

THE SALT TRADE.—The decree of the French Provisional Government, abolishing the obnoxious tax on salt in France after the 1st of January, 1849, and authorising the importation of foreign salt from that date, has given universal satisfaction throughout the country. The reduction of the tax upon salt had, for years, been brought under the consideration of the late Government, as one of the most unjust upon the consumption of a population of nearly 35 000,000, and to the prosperity of the country, being absolutely necessary for the salubrity of its inhabitants, and the development of her industry. According to this decree, the importation of foreign salt will be subjected to a duty of 25 c. (2½d.) per 100 kilos. (224 lbs.) by land, and 50 c. by sea, on board of French vessels, and a duty of 2 fr. or 20d. per cwt. in foreign vessels. The salt produced by the colonies, and other trans-Atlantic possessions of France, and foreign salt, intended for the supply of the French vessels employed in the cod fisheries, shall also be admitted duty free. Hitherto, the French vessels engaged in the Newfoundland fishery, have taken in their requisite quantity of salt from Spain and Portugal, and that at high prices; whilst, had British salt been admitted, at a low duty, into the ports of Bordeaux, Marseilles, &c., for that purpose, the saving would have been more than 200 per cent. to those embarked in the fishery, as France herself produces but a limited quantity, and that very inferior in quality. We have, in former Numbers, alluded to the monopoly which has too long existed over the salt trade in our Indian possessions by the East India Company, to the great detriment of the salt proprietors of Cheshire, Worcestershire, Gloucestershire, &c., by imposing most exacting duties on one of the important mineral industries of this country, particularly as an article of exportation to our colonies—in the west and east, Hong Kong, China, and New Zealand. Those imposts they have very reluctantly reduced, and the salt trade has improved to a great extent, and thrown open a wide scope to that branch of commerce from Liverpool, Gloucester, Bristol, and other parts, and greatly enhanced the salubrity of the population. We see, with pleasure, the reform that the Provisional Government is making by degrees, of the abuses and monopolies which existed under the late Ministry, as to the duties on the importation of the mineral produce of this country; and that on salt will be an important one to our western districts of Cheshire, &c.—whilst by the projected revisal of the tariff on the duties on iron, coal, &c., it will give an impetus to mining operations generally, and a long-wished for commercial intercourse between this and other nations.

GOLD AND SILVER PLATE.—The total quantity of gold stamped in the Goldsmiths' Halls, in England and Scotland, in 1843, was 6412 ozs.; and of silver, 911,044 ozs. The duty derivable thereon amounted to 73,779*l.* 14s. 11d. The quantity stamped in 1844 was—gold, 7236 ozs.; silver, 1,027,050; and the amount received in duty, 83,182*l.* 5s. 9d. In 1845, there was a considerable increase—viz.: gold, 8040 ounces; silver, 1,160,438 ounces; duty received, 93,868*l.* 8s. 7d. In 1846, the returns show—gold stamped, 8335 ozs.; silver, 1,188,736; duty received, 96,243*l.* 0s. 2d. In 1847, there was a falling off in the quantity of metal stamped—the amount being, gold, 7629 ozs.; silver, 1,049,268; duty received, 85,182*l.* 4s. 8d. The returns from the Goldsmiths' Hall, Dublin, show the following result:—1843, gold, 22 ozs.; silver, 27,720; duty, 1759*l.* 18s. 2d.; 1844, gold, 69 ozs.; silver, 33,179; duty, 2134*l.* 11s. 3d.; 1845, gold, 67 ozs.; silver, 40,653; duty, 2556*l.* 4s. 9d.; 1846, gold, 77 ozs.; silver, 34,665; duty, 2047*l.* 2s. 8d.; and, in 1847, gold, 69 ozs.; silver, 20,389; duty, 1183*l.* 17s. 11d.

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* The first 10 works are from the inspection of Sierra Almagrera and Murcia.
† From the inspection of Madrid.

ON WINNING AND WORKING COLLIERIES.

The vast and still extending demand for coal, now so extensively employed as the prime mover of all our ponderous machinery, our steam navy, and inland transit—the greatly increased and increasing depths to which, in many of our mines, resort is obliged to be had for its obtainment, and the obvious necessity for judicious economy in colliery operations—renders an elementary work, from which the young collier may refer as a text book, and the uninitiated reap edification and pleasure, of the greatest importance. We have before us a volume, being Part I. of a *Treatise on the Winning and Working of Collieries*, including numerous statistics and remarks on ventilation, by our correspondent, Mr. Matthias Dunn, mining engineer. Considering that coal mining is the most important staple industrial pursuit in this country—that from its produce has originated that gigantic flood of commerce, with which England has deluged the civilised world, that it is absolutely indispensable for the maintenance of that proud position in which this commercial superiority has placed us—and that the most scientific and careful superintendence over the workings is requisite, for the security of a large amount of capital invested in collieries—we perfectly agree with the observations of the author in his introduction, that "it is a subject of general surprise, that in a nation so deeply interested as this is in the study of mining, there should not exist any elementary work on the science." There is, as the author observes, a good deal of general information on the subject published in the *Encyclopædias*; and the *Mining Journal* contains, from time to time, various and interesting notices of mining matters, but none of them are complete treatises on coal mining, or do they supply that detailed and definite instruction, which is so much required for the guidance of acting colliers, and more particularly the rising generation. From a perusal of the first part of Mr. Dunn's work, we think this treatise will go far to fill up the hiatus complained of, prove a great desideratum to all connected with coal mining operations, and a source of much pleasure and edification to the scientific and geological reader.

We will now proceed to some extracts from the work itself, which is written in a fluent and clear style, avoiding, as much as possible, those technicalities which prove such stumbling-blocks to the general reader. In the introduction, he says—

"The lessor, or owner of the mine, is interested in seeing that a system should be enforced that shall extract the greatest quantity of large coal per acre, with a fair regard to the interest of the lessee; and, in this respect, as before observed, everything depends upon the mode of working adopted by the lessee. The lessor, therefore, ought to understand the matter sufficiently to take care that, in the establishment of the lease, such modes of working shall be provided for as will insure to him the most effective exhaustion of the mine. A nation's wealth has been lost to those two parties by improper working, whereby, in some cases, large quantities of coal have been left in pillars, to be either irrecoverably lost, or so overrun by creeps as to destroy half their value; and, in other instances, by taking away too much coal prematurely, creeps and crushes are induced, the result of which is to convert the otherwise large coal into small, as well as to occasion numerous and unnecessary sinkings. So long as such systems are persevered in, the consequent expenditure must operate in the reduction of the landlord's rent, as well as the lessee's profit. Again, imperfect modes of ventilation, by causing additional difficulties to the lessee, as well as repeated explosions, must indubitably affect the interest of the lessor also, as well as the lives of the workmen and their families."

He concludes his introduction by the following observations on the origin of coal:—

"Difficult as it may be to reconcile conflicting theories as to the origin of coal, we may take it as sufficiently admitted for the present purpose that it is of vegetable origin, and had once existed in the shape of immense deposits of wood or peat, reduced into its present variable qualities by the inscrutable processes of Nature, and by the lapse of ages far beyond human comprehension. The various specimens between the Bovey coal, or mineralised char of Devonshire, and the most compact of the mineralised coals, clearly show that they have been subjected to different chemical combinations, and constituted under different circumstances as to time and pressure. Beds of coal are found interstratified with shales, sandstones, basalt, limestone, ironstone, fire-clay, &c., constituting indefinite districts, which are called coal-fields or coal-basins. The term "basin" has undoubtedly originated in the fact that all coal-fields are basonic in shape; that is, they have a common centre, around which they rise on every side, till they terminate either by cropping out at the surface, or by being violently up-thrown by some fault. The above alternations with which coal is stratified, as well as the coal itself, are subject to perpetual changes of nature and thickness as we trace them from one district to another. When those outcrops occur in strata which have been denuded of alluvial matter, of course the coal-beds become visible, and lead to their working by means of drifts from the surface; and such may be said to have been invariably the case in the early working of all coal-fields, for instance the cropping up of the Edge seams of Mid Lothian, about Edmonstone; the Newcastle coal seams, about Whicham and Benwell; and the Mostyn coal seams, in North Wales, a profile of which accompanies these remarks. In flat countries, covered thickly with alluvial matters, no such criteria can be discerned. Therefore, although the theory of the extension of those seams of coal to the dip, which are seen at the outcrop, is well admitted, yet there are no means of ascertaining either the depth at which they lie, or whether, and to what extent, they vary in their nature, save by boring or sinking. Beds of coal are found in thicknesses varying from 1 in. up to 60 ft., and the thickness workable to profit varies according to the cost of producing it, and the value when produced; but I may state generally the minimum workable thickness at 18 in., to accomplish the working of which a considerable portion of the roof or floor must be taken away to enable the coals to be conveyed out of the mine. The coal seams lie towards each other in irregular parallels, interstratified, as before mentioned, with portions of secondary formation. The plane at which they lie is also continually changing, as from the Edge seams of Mid Lothian to the perfectly horizontal; and every coal-field is more or less intersected with faults or slip-dykes, in which dislocations of the whole strata have left the beds upon the one side considerably more elevated than on the other, either by the strata having been raised or depressed during such process. The strata are also accompanied, more or less, with water, inflammable air, choke damp, pyrites, whin-dykes, and other substances, which will be brought into notice in the course of the work, as calling forth the ingenuity of the miner, and demanding a suitable capital from the adventurer. With respect to dykes, although they frequently give a complete interruption to the coal-field, and require some expensive process of sinking or drifting to regain the coal, yet they are often found to constitute the saving of coal-fields, inasmuch as they may have taken place at parts close upon the natural outcrops of the seams; whereas, by the intervention of downcast dykes, they are again depressed many fathoms, so as to become a new coal-field. For instance, the Wallsend seam, near Newcastle, which is known to crop out to the northward of the town, is, by the intervention of a downcast dyke, thrown down, at least, 100 fms., forming a new coal-field; and, *vice versâ*, in mining from the rise to the dip, the occurrence of an upthrow dyke is hailed as a great boon."

We shall, in future Numbers of the *Mining Journal*, continue extracts from the body of the work, comprising carboniferous strata, searching for coal, varieties, peculiarities of coal-fields, various modes of letting, numerous sections of seams, thickness and depth from surface, boring, sinking, tubbing, with the different modes of working in various parts of Great Britain and Belgium. We are glad to find that our friend, Mr. Thomas Deakin, of Blaenavon, has transmitted to the author sketches of his mode of working, which is acknowledged in the work. It is from such mutual exchanges of ideas, in different localities, that the greatest advantages will accrue to the colliery interest.

FEED APPARATUS FOR BOILERS.—An arrangement has been suggested for a feed apparatus for boilers for steam-engines, by Mr. Sutherland, of Liverpool, as a means of guarding against gorging or drainage of the boiler, and thereby preventing explosions. It consists of a valve-chest, having a horizontal partition in the centre, beneath which is the induction pipe for the water, and above it the eduction. From the bottom of this valve-chest, a pipe descends into the boiler, through which a rod rises, the bottom of which is attached to a ball-float in the boiler. In the bottom of the valve-chest is a conical valve, opening downwards, and in the partition, one opening upwards, both fixed to the rod in such manner that when one is open the other is shut. On a deficiency of water in the boiler occurring, the float falls, shuts the upper valve, and opens the lower, when the water immediately rushes in, fills the boiler, raises the float, closes the bottom valve, and opens the upper one, when the superfluous water escapes through the eduction pipe above the partition.

CANALS AND RAILWAYS IN THE UNITED STATES.—A statement, lately published in New York, shows the total number of public works in the United States, consisting of railroads and canals, with the length of each, the cost and the net profit. From this, we gather that there are at present in operation 2658 miles of canal, constructed at an outlay of $91,090,649—being about $34,250 per mile, or 7000*l.* sterling—the net income from which is $4,222,585, or about 4⅝ per cent. In addition, there are about 475 miles not in operation, or of which the revenue returns are not given.—Of railroads there are 3376 miles, constructed at an expense of about $104,200,000 (being about $31,000 per mile, or 6200*l.* sterling), yielding a net income of about $6,700,000, or 6⅜ per cent. There are also 2133 miles contemplated, unfinished, or discontinued, or of which the revenue returns are omitted. Assuming the correctness of these figures, it will be observed, that the rate of interest on both descriptions of works is rather low—7 per cent. in the United States being an ordinary rate even on the best securities. At the same time, it must be borne in mind that a large proportion of these works was promoted by the respective states more for the sake of bringing property into value throughout the various routes than for the actual prospect of clear returns on the investments themselves—so that, on the whole, English capital has been turned to profitable account in America, whatever may have been the fate of its lenders.

RAILWAYS IN SCOTLAND.—The *Stirling Observer* gives a curious calculation regarding the railways in Scotland. It estimates the length of railway for which Acts of Parliament have been got at 1620 miles. If each of these miles cost 25,000*l.*, a capital of not less than 40,500,000*l.* has been actually expended, or is about to be expended, upon this new mode of investment. Supposing, then, that the shareholders should average 5 per cent. for their money, it will follow that, as about 88 per cent. of the drawings is required for working the lines, the directors of these lines expect the people of Scotland to pay them a voluntary tax every year of about three-and-a-half millions of money; or, in other words, that each family of five persons shall pay annually for the support of railways, 6*l.* 10s., and each individual, of whatever age, 1*l.* 6s.

Original Correspondence.

PURE IRON, &c.

SIR,—A short time since, I observed some very sensible remarks of Mr. Leighton's, in reference to pure iron; and, as Mr. Leighton seems to be much in advance of the very limited ideas and practices which prevail amongst ironmakers in general, I shall offer a few remarks which may prove interesting to him, and possibly to many more of your numerous readers. I would, however, observe, that I am not going to find fault with the ironmasters, but only with their iron. It is no fault of the manufacturers that the public, and railway companies especially, are content to purchase at a low price the crude and heterogeneous compound called bar-iron, but which is no more pure iron than brass is pure copper; yet it answers two important ends—that is, it yields a handsome profit to the manufacturer, and it is a cheap and tolerable substitute for real pure iron, which is as yet unknown in the arts and manufactures, and is only approximated to at certain obscure iron-works in Russia and Sweden, where, from a happy combination of the native materials, the bar-iron produced from them contains often from 96 to 98 per cent. of pure iron—whilst the best Staffordshire nail rods never contain more than 94·5 per cent. of pure iron; and the common Welsh bars, often as little as 90 per cent., especially the cinder iron.

Perfectly pure iron is a dense and exceedingly brittle metal, of a specific gravity of 8·27. It is incapable of extension under the hammer at any temperature which can be communicated to it. It is far more fusible than any kind of ordinary cast-iron, and deflagrates violently on exposure to the atmosphere—its affinity for oxygen being exceedingly powerful in the absence of any combined carbon. When pure iron is combined with carbon to the amount of $\frac{1}{1000}$th part the weight of the latter, the property of malleability begins to be developed in the metal; and, when polished and heated gradually, it takes on the various prismatic tints peculiar to steel—but the colours are faint and less vivid than those observable in tempering polished steel. Iron thus combined with carbon is more infusible than pure iron, and less disposed to deflagrate on exposure.

As the proportion of carbon, combined with pure iron, is augmented, the malleability of the mass is increased, as also its infusibility, until about $\frac{1}{200}$th part of the weight of iron in carbon has been combined. The malleability of the iron, when heated, is now at its maximum, and so also is the infusibility of the compound. Iron in this state is susceptible of hardening to some extent like soft steel. It also has a slight tendency to break short when cold. The Danemora iron nearly resembles this compound; but it contains in addition about 15 per cent. of manganese, which constitutes its only defect. Manganese may sometimes improve inferior iron, but it always deteriorates pure iron.

When the carbon, combined with pure iron, is increased in its proportion from $\frac{1}{100}$th, or ·2 per cent. upon the weight of that iron, to ·3 per cent., all the varieties of soft steels are successively produced; and with ·3 per cent. of carbon, good easy drawing steel is formed; whilst the fusibility of the metal begins to increase, and continues to augment, until, with ·35 to ·4 per cent. of carbon, the limit of fusibility, combined with the property of malleability is attained; and, beyond this, the metal passes into steel-grained white metal, with a deeply honeycombed surface. As the proportion of carbon is still increased, the honeycombs become less indented, and the fracture resemble ordinary refined metal, whilst the hardness is very great, and continues to increase, until a sufficient quantity of carbon is combined to form a definite chemical compound of iron and carbon, consisting of—pure iron, 97·26; carbon, 2·74=100·00. This compound, when slowly cooled, crystallises in beautiful octohedra. Its fracture and appearance resembles what is called white cast-iron. This is the only definite compound of iron and carbon whose composition I have ascertained; but I believe there are two more definite compounds—one constituting crystalline steel; and the other forming graphite. Beyond 2·74 per cent. the carbon does not combine chemically with the pure iron; but begins to show itself in mechanical mixture, dotted throughout the compound, presenting the appearance of mottled iron. The fusibility begins now to diminish, and the tenacity and elasticity of the metal increases. With 3 per cent. of carbon, graphite begins to appear, which is, I believe, a definite compound of iron and carbon in equivalent proportions; but I cannot decide upon this matter, though many of the great metallurgists and analysists speak of graphite as though they really had ascertained its true composition. It is easy to combine pure iron and carbon in any proportions, under 10 parts of the former to 90 parts of the latter; but this combination always requires a higher temperature and a longer exposure, as the proportion of carbon to pure iron is augmented. With five parts of carbon, and 95 of pure iron, rich black lustrous cast-iron is formed; but it is deficient in the strength, hardness, and elasticity, observable in less carbonated iron. Ten parts of carbon, and 90 of pure iron, form a compound of a rich black colour, consisting of thin plates, or scales, adhering together so slightly as to be easily pulverised in a common wedge-wood mortar. From the preceding observations, founded upon carefully-repeated experiments, it appears, that pure iron is the most fusible state of that metal—that the addition of carbon increases the malleability and diminishes the fusibility of the mixture, until it begins to pass into the state of steel, when the fusibility and malleability both decrease, until the limit of hard steel is attained; and the iron passes successively into the state of white metal and white cast-iron. Here again the fusibility is at a minimum, and the malleability has disappeared. Again, as the iron becomes mottled, bright grey, and, ultimately, highly carbonated, the fusibility diminishes, and the malleability, though very imperfect, increases.

Mr. Leighton is quite right in observing, that ironmasters cannot understand what he means by absolutely pure iron—in fact, they have never seen it; nor can they, or any of the learned metallurgists, from Karsten down to Radley, even describe its appearance and characteristics. It is impossible to convey an adequate idea in words of the strength, tenacity, ductility, and brilliant appearance of absolutely pure iron, combined with *carbon only*. Inspection alone, and a trial of these qualities, can show clearly the immeasurable inferiority of the best manufactured iron, commonly termed soft pure iron, to that *actually* free from impurity.

The preparation of absolutely pure iron would be an expensive process, and it is vain to expect its adoption on a large scale; but much might be effected towards improving the quality of British bar-iron, if the wealthy portion of the iron manufacturers were to devote their attention to this subject upon sound and philosophical principles; but, unfortunately, they are contented with their ample profits upon an article of inferior quality, and care little about any improvement, unless a decided saving in cost is thereby effected. The art of ironmaking is yet in its infancy; and, although the bantling is already of gigantic stature, still its education has been hitherto overlooked, or, at least, greatly neglected. I look upon the iron trade as in the same crude condition as was the agriculture of Norfolk before the time of the celebrated Mr. Coke; and that an ironmaster, having at his command an equal amount of wealth and intelligence with that possessed by the above enterprising agriculturist, might effect as complete a revolution and improvement in the manufacture of iron as that brought about by Mr. Coke in farming operations. There is a wide and barren field open for cultivation, yet no real improvements are made in the quality of the iron produced. We often hear of extraordinary makes of pig-iron as to quantity, and also of immense bars and sheets of iron rolled out in one piece; but we never hear that, at any work, bar-iron has been produced equal in quality to the foreign makes—on the contrary, the general character of British bar-iron is much lower than it was 20 years since. I recently saw some 1½ in. square bar-iron from a celebrated iron-work in Wales, broken short, when cold, like cast-iron, with the blow of a light sledge. A fragment of this choice product was fused in a close porcelain crucible; and, when afterwards weighed, it had lost 9·7 per cent. of its weight, and was surrounded with a quantity of greenish glass, or cinder. Danemora iron, in fusion, *per se*, loses only $\frac{1}{2}$th per cent. in weight—so that the Welsh iron contained above 9 per cent. more of dross, or impurity, than the Swedish iron; neither was it freed from all its impurities by this fusion; for it retained enough lime to make it completely red-short.

Iron is the most tractable of metals; for it will bear to be alloyed with almost any substance of a metallic nature, without losing more than a portion of its valuable properties. Every alloy, however, deteriorates its quality; but some alloys are comparatively harmless—such as manganese, and minute portions of nickel, barytes, and phosphorus. Manganese has been supposed to improve the quality of iron; and, perhaps, to a certain extent, this may be true—for it often supplies the place of deleterious alloys, or combines with them in fusion, and carries them off in the state of slag. Chemists have been unable to determine exactly the equivalent of iron—and hence their analyses are all contradictory, often absurd, and always incorrect. Thus, Karsten states, that he has found 2·3 per cent. of carbon in cast steel; but never more than 1·75 in cemented or blistered steel—so that, allowing for a moment that cast steel really could contain such a per centage of carbon, it follows that the blistered steel gains ·55 per cent. of carbon during fusion in a clay pot—a fallacy of conclusion which needs no comment.

Now, I find, from conclusive experiments, that cast steel, which contains only ·5 per cent. of carbon, crumbles to pieces at the lowest red-heat under the hammer; yet Karsten finds, by *analysis*, 2·3 per cent. in cast steel. The per centage of carbon gained by Danemora iron during cementation, for highly converted steel, is only ·15 to ·17 per cent. I am satisfied that no accurate analysis of iron or steel has ever been published; and it is only by synthesis that the amount of carbon combined can be correctly ascertained.

Some years since, my father sent a sample of grey cast-iron to each of three eminent analytical chemists, that they might each ascertain the per centage of carbon which it contained. The iron was all filed from a button, obtained by fusion in a crucible. The analyses gave 4·62, 3·17, and 2·41 per cent. of carbon respectively—so much for analysis as applied to ascertain the amount of carbon combined with cast-iron.

Coleford, April 17. ROBERT MUSHET.

STEAM BORING MACHINE.

SIR,—Allow me to inform your correspondent, "Steam," that he is not the only person who thinks steam may be employed for the purposes of boring and sinking. About two years ago, I proposed a machine for boring hard rock in Wheal Vor, to be worked either by steam, compressed air, or water from a standing column, or the lifts in the engine-shaft; the said machine to beat the borer as men do; or to work a jumper, as proposed by your correspondent; but, about that time, the bottom of this mine was suspended, and having no place to apply it, the matter ended. I have since seen a notice in the *West Briton*, that some person in the neighbourhood of Calstock had obtained a patent for boring and sinking, but in what way was not stated.

The expense of boring is, I believe, the principal reason why lodes are not tried by that means previous to opening a mine—similarly to boring for coals; and any person having a portable engine and boring tools may do well by contracting for such work.—J. B. WILKIN: *Helston, April* 17.

ON CUPELLATION.

SIR,—Dr. Murray and Mr. Mitchell have very justly remarked on the absorption of silver in assaying by the cupel. The quantity is not great, as Mr. Mitchell observes, when the precaution is taken of using bone ash in a very fine state of pulverisation. I generally use in cupels, for assaying in this way, bone ash, very fine, and made sufficiently damp with a strong potash solution, as it assists in vitrifying the cupel when using; and I have an opinion that it prevents that degree of oxidation of silver taking place which Mr. Mitchell alludes to. Acting in a trifling degree as a salutary flux, of course, all these precautions are not at all equal to the humid method. For cupels in the large way, I use a stronger solution of potash, with the bone ash much coarser; but Mr. Pattison's beautiful process, in a great measure, supersedes the use of the cupel in the large way; and Mr. A. Johnson, of Gresham-street, has discovered a very simple and excellent method for re-using the bone ash in large cupels, and which, I have no doubt, will be found of great advantage to smelters and refiners. What I have expressed above has been derived from pretty long observation of the subject in question. If my observations thereon are erroneous, I shall be glad if your talented correspondents will set me right through your valuable paper.—A SMELTER: *London, April* 19.

WORKING AND VENTILATION OF COAL MINES.

SIR,—Mr. Sutcliffe is perfectly right in saying, that a cupola pit should be set apart for the use of the furnaces in colliery ventilation, in the case he alludes to, and not a working pit. In my case, there was no alternative but to employ the working pit for that purpose; had there been a pit set apart for upcast ventilation, and a 40 ft. stack upon it, one furnace would have been amply sufficient. To overcome the disadvantage of using the working pit for the upcast, I placed an additional furnace side by side, so that the same attendance would answer as if there was only one—the additional cost is in the use of double the quantity of coal. If I had my choice, and the situation would allow it, I would always sink my upcast pit on the extreme rise of the coal; but, in this district, the right way is often entirely out of the question. The works and pits are in the valleys, between the hills; and the rise of coal extends under the highest part of the hills, from the top of which sinking air-pits would be a serious affair; and economy, even in ventilation, as in every other department of colliery business, must be attended to. On the system of long work, shown in my sketch, in the *Mining Journal* of the 1st inst., all the room need not be filled in behind as the work advances. Regular lines of building are erected, called "cogging," 5, 6, and sometimes 7 yards apart, and 4 or 5 yards broad, reaching to the roof, with open wastes left between the coggings, from which the materials for building them are obtained. These materials are composed of the roof, which falls down in the wastes; and all the stuff, from ripping down horse-roads to the necessary height, is shifted into the work, and used for cogging purposes. The thickness of the seam of coal, which the sketch represents, is 3 ft.; and I have seen the whole length holed 1 yard, and resting on props, called by the colliers "sprags." By cutting, here and there, some of the sprags free, the whole wall of coal would roll off 2 or 3 in. beyond the holing; and there would be 100 tons of coal, on freeing the sprags, without a ton of small in the whole.—T. DEAKIN: *Blaenavon, April* 18.

REFORM OF THE PATENT LAWS.

SIR,—I cannot feel otherwise than much gratified at the compliment conveyed in the last Number of the *Mining Journal*, by Mr. Craddock, of Birmingham, to my efforts for the advancement of the interests of inventors and patentees, by petitioning the Legislature in such form that the system of misrule that now discourages their exertions, on behalf of commerce and the arts, may be remedied, as regards those points which are so materially and oppressively defective. Nevertheless, I must not allow Mr. Craddock, or the public, to suppose that I am actuated by an unalloyed feeling of patriotism, because I know that I am fully as much prompted to the course I have taken by a desire to do something for the benefit of those from whom I have received support in my professional career as a patent agent. Indeed, under such circumstances, I should consider myself highly culpable did I not snatch some moments from the prosecution of my duties, and bestow them upon objects so very material to their interests.

With regard to the hint thrown out by Mr. Craddock, that the law of patents should be assimilated to that of copyright, I must be allowed to say, that I conceive literary copyright and the exclusive property in inventions to be, *ab initio*, two distinct things—because authorship, in the literary sense, at all events as far as the higher class of compositions is concerned, is principally the result of genius and imagination, whilst invention, as regards the useful arts, is as much, nay more, the effect of experience and perseverance. The inate difference between the two has been well pointed out by Hindmarch, in his *Treatise on the Law of Patents*, who adds—"If Milton had not written *Paradise Lost*, it is extremely improbable that it would ever have been written at all. But if Watt had never published his invention, it would most probably have been discovered long ere now, that a condensing steam-engine is worked with more economy when the steam is condensed in a separate vessel, and not in the cylinder." I am, however, willing to agree with Mr. Craddock, as regards the great consideration due to original, (or I would rather term them *primary*) inventors, who are an exception to the above theory, because they are, and must be, classed amongst those noble of nobles—original thinkers; but, then, in the present advanced age, how many inventors are there that can be thus termed original? In fact, the mass of inventions are improvements—many highly meritorious—upon the great primogenial or original inventions that have already preceded them; and I think it must be owned, that the inventor of the average run of *improvements* in motive-power, spinning or weaving, does not stand on such high ground as a Shakspeare, a Milton, a Newton, or a Locke; therefore, I cannot look upon literary copyright and invention right otherwise than as distinct things. Moreover, the public policy of extending the property right in inventions to the term of the life of the author is very questionable, because it would tend to retard commercial progress, by shutting up improvements in monopolies of considerable and uncertain duration. I am free to confess, however, that I should be glad to see the law stand thus—that a patent, not having repaid the inventor within the 14 years, be allowed extension for any further period, sufficient, in the discretion of the Government, to leave a suitable return for the inventor; but this is not very urgently called for, because, as the law now stands, the patent may be extended for 14 years beyond the first 14 years, if the Privy Council see fit; and I can scarcely imagine, that a generally-useful invention would not amply repay its author in 28 years. If I understand Mr. Craddock aright, he proposes also to have a commission, to examine into the merits of inventions, previous to patents being issued for them. This, I am afraid, would be more productive of evil than good; because, in the first place, it would be difficult to get a body together, that should be sufficiently impartial and unprejudiced to adjudicate upon ideas, in many cases, quite hypothetical; and then I am quite sure such a system would not meet the approbation of inventors generally. For all these reasons, although I sincerely thank Mr. Craddock for his suggestions, I cannot agree with him as regards the advisability of their being incorporated with the law of the land.

210, *Strand, April* 19. F. W. CAMPIN.

REFORM OF THE PATENT LAWS.

SIR,—It affords me great pleasure to see the subject of Patent Laws—one of the worst and most inefficient existing in our civil codes—so ably discussed in your valuable Journal. I could, if more facts were necessary to prove its utter uselessness as a protection to inventors, give you many an instance that has come within the pale either of my own experience or observation, of "piratical might" crushing "defenceless right." Great praise is due to Mr. Campin for the exertions he is making in the cause; and he ought to receive the support and encouragement of all persons interested, but particularly of inventors themselves, who have had such bitter experience of the want of what Mr. Campin is striving so anxiously to obtain. Perhaps you would allow me to suggest an idea that has struck me, which, if practicable, would be of great benefit to poor inventors—viz.: when an invention has been examined, and proved useful and worthy of a patent, and a patent been granted, then the *Government* shall protect that patent against infringements; for which protection, dues, or a royalty, shall be paid, varying in amount according to the value of the articles manufactured under the patent, and collectable by the Excise.—JOHN LONGBOTTOM: *Tenter-lane Works, Leeds, April* 19.

RAILWAY IMPROVEMENTS.

At the Society of Arts, on Wednesday evening last, a paper was read, by Mr. SCOTT RUSSELL (the secretary), "On some Plans connected with Railway Improvements—the objects being, to break the shock of railway trains in cases of collision, the production of a self-acting graduated time signal, and a suggestion for a new method of applying the elastic resisting power of steel for railway carriage springs—by Mr. W. BURCH." The paper commenced with a description of the springs, as applied for a buffer spring It is so constructed that, instead of the weight pressing on the ends of a series of flat bars of curved steel, with a tendency to force them into a straight line, as at present in use, Mr. Burch employs a single bar of well-tempered steel, slightly curved, forming a portion of the centre bar of the carriage, and so placed, that any collision has a tendency to pull it out into a straight line. Several calculations were given, showing the much less weight of steel required, and the superior efficiency of the plan. The signal is intended to show the engine-driver of every train how long it is since the previous train left the station; it consists of a circular disc, 2 ft. in diameter, turning freely on its axis in a vertical direction; on its axis is a drum, round which is passed a band, in connection with a weighted lever, at some distance below; round the outer edge of the disc is fixed a metal tube, having within funnel-shaped cavities, with a small orifice at the bottom of each. Sufficient mercury is placed in these cavities to fill one-quarter of them; the weighted lever below is just sufficient, by its action on the drum, to turn the disc, until the mercury stands level with the axis, which, continually oozing through the orifices, keeps the disc in motion; in front is a dial plate, with a hand, showing the time elapsed since the passing of the previous train; and, on the next starting from the station, it acts on the lever and turns the disc, until the hand again points to zero, or the starting point. The most important part of these improvements, however, is that for breaking the shock given to the carriages in a train when a collision takes place—the author of the paper having hit upon an entirely new idea, based on truly scientific principles, and which is expected to prove as efficacious in practice as it is novel in theory. The introduction of buffer springs between the carriages are only effective for good, in breaking the slight concussions, common in general safe railway transit; but, in the event of a collision at high velocities, they are driven home, and the springs pressed to their utmost tension; the momentum of the train being in a great measure broken, they re-act with terrific force in a contrary direction—first throwing the passengers in the direction of the concussion, and again, on the carriage being arrested in its backward movement, by the coupling chains, dashing them back with equal force. When the frames are not sufficiently strong, and the force applied to the springs is greater than sufficient to drive the buffers home, the whole give way, and the carriages are completely broken up. It struck Mr. Burch that having, by getting a train into rapid motion, generated an enormous power, when the momentum is suddenly arrested (which power is expended in the destruction of the carriages), that if some intermediate substance could be introduced on which this power could expend itself, after having overcome the resistance of the springs, the destruction of, and even a great portion of the concussion on, the carriages might be avoided. In the choice of a material, he prefers iron; and this so placed, that the force employed should tend to pull asunder a bar of iron 1 in. in diameter lengthways; to effect this, requires a force of 8 tons, which Mr. Burch considers sufficient to counteract a collision, when going at the rate of 18 or 20 miles per hour, which, as there is generally some warning, and the breaks are brought into use, is about the maximum velocity at which they happen. Each buffer, on the present system, is only equal to sustain the concussion of one ton, moving through 1 ft.—the train going at the rate of five miles per hour.

How to place this bar-iron to be properly acted upon, in case of a collision, and by its legitimate destruction, save the destruction of the carriages, was the next consideration; and this he accomplishes, by placing a series of rings, of inch bar-iron, on the end of a tube, passing under each side of the carriage, and forming the buffer rods; on the front of those of the succeeding carriage he places an iron cone, of such size that, in being forced into the rings, it breaks them successively as the cone enters; the destruction of each ring absorbing 8 tons of the power created by the momentum, until it becomes equal to the gradual reaction of the buffer springs, and the carriages are brought to a stand still. The force required to break the timber-framing he estimates at 60 tons. From the discussion which followed, in which the secretary (Mr. Scott Russell), Mr. Varley, Mr. Wilson, Mr. Newton, jun., and other members, took part, it was evident the proposal of Mr. Burch excited much interest. It was allowed by all to be founded on true mechanical principles, to be decidedly new, and the principle totally different from any plan hitherto proposed, He was highly complimented on the discovery, as it was believed by all who took part in the discussion, that it would lead to a highly important change in the construction of railway carriages.

NEW PATENTS.

T. and J. E. Gill, Plymouth, for improvements in the manufacture of manures.

H. H. Henson, gent., Hampstead, Middlesex, for certain improvements in railway carriages and waggons, and in vessels of capacity employed in the storing and conveyance of explosive substances.

T. Forsyth, New North-road, Middlesex, engineer, for improvements in railway wheels.

C. Green and J. Newman, manufacturers, Birmingham, for improvements in the manufacture of a part or parts of railway wheels.

R. Madigan, Haverstock Hill, Hampstead-road, Middlesex, civil engineer, and J. C. Hadden, Lincoln's-inn Fields, Middlesex, civil engineer, for improvements in the manufacture of wheels for railways.

S. Hiler, New York, United States of America, for improvements in stair-rods.

D. Davies, Wigmore-street, Cavendish-square, coachmaker, for certain improvements in the construction of the heads of open and close carriages.

J. Britten, Birmingham, for certain improvements in heating, lighting, ventilating, and closing and securing the doors of apartments, also for lighting and ventilating carriages, parts of which improvements are applicable to other like purposes.

M. Cochran, High-street, Paisley, Renfrewshire, for certain improvements in the production of coloured patterns or designs on warps of carpets, velvets, and other textile materials, parts of which improvement are also applicable to the production of coloured patterns or designs on woven fabrics or other plane surfaces.

S. Clegg, Regent's-square, Middlesex, engineer, for improvements in gas meters.

J. T. Harradine, Holywell-cum-Needingworth, Huntingdonshire, farmer, for an improved mode of fitting certain girths and straps.

H. Gilbert, St. Leonard's-on-Sea, Sussex, surgeon, for an improved mode or modes of operating in dental surgery, and improved apparatus or instruments to be used therein.

C. Atwood, Esq., Wolsingham, Durham, for a certain improvement or improvements in the manufacture of iron.—*Mechanics' Magazine.*

SCREW WRENCH.—We observe, in a Glasgow periodical, a plan, by Mr. Parks, of Kingswood, Gloucestershire, for a wrench, or spanner, worked by an endless screw, running in a rack between the moveable and fixed jaws. We can assure Mr. Park, that so far from the plan being new, we have seen it on sale in London for several years past.

MINING IN SOUTH AUSTRALIA.

[FROM OUR CORRESPONDENT.]

ADELAIDE, Oct. 20.—Mr. Burr, deputy surveyor-general of this province, has resigned that situation, in order to accept of the situation of superintendent of the Great Burra Burra Copper Mines. Mr. Burr has been many years in his former situation, during which time he enjoyed the respect of his immediate commanding officer, and the several governors, as well as the esteem of the great body of colonists. To Mr. Burr, the colony is indebted for much valuable information on the geological and mineralogical structure of this part of the world, in both of which sciences he is well versed. Add to these, his thorough knowledge of the various duties of a surveyor (all of which are requisite and necessary in mining), and his business habits, acquired during many years of an official life: the directors of the South Australian Mining Association have acted well and wisely, to make it worth Mr. Burr's while to take the direction of their invaluable property. Mr. Burr receives 700*l.* a year, with a suitable residence to be built immediately for him, and other advantages.

A resident magistrate and police commissioner has also lately been added to that now large community; the population exceeds 900 souls already, and as the mine can employ a greatly increased number, as soon as they arrive from England, the presence of a magistrate is very desirable. The gentleman who holds this appointment, Mr. Lang, from Portsmouth, lately came out from England for that purpose; although no doubt exists as to Mr. Lang being well qualified for that berth, it is a matter of great disgust to the colonists, that the colonial office people are ever ready to snap up every little appointment in the colony for their own hangers-on, when the colony itself contains plenty of gentlemen of high character and local experience, who are fit for any situation that may occasionally become vacant here.

For the last month past, the weather having settled fine and dry, the lethargy (which was caused by the rainy season, and existed, more or less, at different mines) has given way to renewed activity. Everywhere a great bustle and stir is perceivable. For the present, however, the Burra Burra is the only one making her usual prodigious show. Files of drays, going up and returning with ore, are to be met with every two or three miles, all the way from the port to the Burra Mine. Although there are upwards of 200 drays now carting from the mine, that number is found quite unequal to make any great impression on the heaps of splendid ore lying at the mine ready for transport. The first 500 tons, which reached the port, were sold a few days since at 17*l.* 17*s.* per ton, to the local Board of Direction of the London Australian Mining Company—the purchasers buying the ore outright, and having to pay all charges, on sending it to England, themselves. The London company, having been foolish enough to charter several large ships to load here with ores from *their* mines, and, not having an ounce to ship, are forced to buy Burra ores to fill them. This is the second lot they have purchased for that purpose; and we are here anxious to see what effect this news will have on the extravagant premium which has been unaccountably paid on the shares of that company, on mere speculation.

I have, in a former communication [*Mining Journal*, Feb. 12], informed you, that henceforward it is probable all ores will be purchased at the port by the Adelaide merchants, as remittances to their constituents in England for goods sent out. This sale will, of course, immediately cause another dividend to be paid. I was at the mines last week; there are upwards of 6000 tons of washed ore, of, probably, 35 per cent., ready to be carted at once; heaps estimated at 2000 tons more in the course of cleaning, and not a shaft on the mine but would disgorge new treasures, had they men enough to do all the work. The artisans are now busily at work constructing horse-whims for all the shafts; at present there are only two whims finished—one drawing ore, the other water. The arrangements on the surface, for economising the water and cleaning the ore, will bear comparison with any Cornish mines; the works are all constructed under the care of a most active and efficient officer, Capt. Roach, nephew of the Captain Roach, of Treavavean Mine. Ground has been broken on the surface at several new places at some distance south of the present shafts, and the indications met with are so encouraging that new shafts are already in progress. Three miles south, and three-quarters of a mile from the northern boundary of the Princess Royal Mine, a shaft is also being sunk in most favourable ground, with abundance of the richest gossan, and rich stones of ore from the very surface. I witnessed, amongst other things, the smelting operations which are under the direction of Mr. Dreyer, who has had 22 years' experience in the Hartz Mountains, smelting copper with charcoal; it is a small blast-furnace, of two 10-ft. bellows, driven by a pair of horses; it answers very well for an experiment, but cannot succeed with horse-power on a large scale. The ore is first slightly roasted by heaping it on a few logs of wood, and setting fire to it; this is found quite sufficient to drive off the very little sulphur contained in it, and the moisture. The furnace is then charged, adding a little limestone as a flux, and in three hours the copper is run off in the state of black copper; one more smelting produces fine metal. The slag separates perfectly pure from the metal; nothing could be more satisfactory; and it is now certain that, with a steam-engine to produce the blast, any quantity of copper, in comparison to the number and size of the furnaces used, can be manufactured at the mine—thus making available all those ores which have hitherto been looked upon as not good enough to be sent to England.

The specimen of crystallisations of the different varieties of ore which are now found at the Burra, are exceedingly beautiful. An 80-in. cylinder pumping-engine has some time since been ordered for the Burra Mine. The Bon Accord, adjoining the Burra to the north, have not yet cut the lode—the indications continue very good. The engine for Kapunda has at length arrived; a considerable period must, however, elapse, before they can get at work. A few men are only employed now, chiefly in picking over the heaps of rejected ores for shipment to England.

I visited the Paringa and Kanmantoo Mines lately. At Paringa, in spite of the most astonishing indications, little ore is being raised; they must go deeper. I enclose a table of assays, of 18 specimens of silver-lead ores, found at Paringa,* which are now being worked; they are rich in silver, and Paringa shares have gone up in consequence, and are quoted from 5*l.* 10*s.* to 6*l.*

At Kanmantoo (the Australian Company's mine) they are working on a magnificent lode, of bright yellow ore. In the 18 fm. level the lode is 9 ft. wide, and has been opened for a length of 30 or 40 yards without coming to the end of it, and depth of course unknown. The ore, however, is so sulphury, that it must be roasted before it can be shipped, as it would be sure to set fire to any ship that was unfortunate enough to load it. The miners also find the evaporation from the lode scarcely endurable; excepting this fault, the lode is splendid; they have, however, other lodes of peacock ore, which do not contain this combustible character.

There is nothing new at any of the other mines worth mentioning to-day.

The staff of the London Australian Mining Company has arrived, proving that their mineral property is intended to be actively explored.

The subject of railways is now occupying the attention of the council, and a bill is being prepared to facilitate the subject.

Major, now Colonel Robe, has, at his own request, been removed from the Government of this colony; he is appointed to the lucrative post of deputy quarter-master-general at Mauritius. He is succeeded by Sir Henry Fox Young, who is daily expected from the Cape.

Nov. 2.—Another lot of 500 tons of Burra Burra ore has been sold at the port, for 19*l.* 10*s.* per ton; another similar lot will be for sale next week. The deliveries at the port from the mine is, some days, more than 100 tons; such is the number of drays employed in carting it down.

I forward to you the last half-yearly report of the directors of this property, which I recommend to the attentive perusal of your readers. The results therein shown astonish us who live on the spot.

The Australian Mining Company (London-bridge) have leased the Montacute Mine, at 1-10th dues, for three years, and to keep 12 tutwork men at work during that time—so there is every probability of this valuable property being brought into productive operation, as several good lodes are opened, which will yield a good deal of ore.

MOUNT REMARKABLE SPECIAL SURVEY AND MINES.—A general meeting of shareholders was held at the offices of the company, on the 12th October. The report of the directors fully manifested the favourable impressions produced by Mr. Finke's discoveries, and the specimens produced from the newly discovered lodes were such as to justify the flattering advices which preceded them. All doubts as to the great value of this extensive and varied property are now happily dispelled.—*Adelaide Observer.*

* *Table of Assays of Paringa Silver-Lead Ores.*

No.	Per cent. Lead.	Silver Ore, ozs. to ton.	Silver to Lead.
1	80	54	108
2	25	0·1	—
3	36	81	225
4	51	80½	149
5	15	18	120
6	55	90	163
7	25	40	160
8	78½	85½	109
9	49	68	133
10	58½	36	61
11	15	14	95
12	35	62½	179
13	61½	70½	114
14	32½	38½	118
15	44	74½	169
16	44	56½	127½
17	83	60½	146½
18	33½	44½	137½

SOUTH AUSTRALIAN MINING ASSOCIATION (BURRA BURRA MINES.)

At the half-yearly meeting of this association, held at the offices of the company, Rundle-street, Adelaide, the 20th October,

CHARLES BECK, Esq., in the chair,

It was resolved unanimously,—That the report of the directors, with the returns and statements, be received, approved, and entered on the minutes of this meeting.

REPORT.

The directors have the pleasure to tender their usual report to the proprietors, and can confidently assure them that the affairs of the company continue in a most prosperous condition. By reference to the ore returns accompanying this, it will be seen that the quantity raised during the last six months is more than double that produced in any corresponding period, and is superior in quality. Some time since a lode was discovered about a mile from the southern boundary of the survey, and three miles from the principal workings on which operations are being carried on. Blue carbonate of copper has been found near the surface; and, from the nature and appearance of the ground, it is believed that a good supply of ore will soon be produced. The pitches throughout the mines are looking well, and still promise abundance of ore. The cartage did not entirely cease during the winter, and has lately greatly increased, so much so that, during the last week, 498 tons were delivered at Port Adelaide. The Swansea ticketing lists for 947 tons of the ore shipped in the early part of last season have just been received—a small portion of which brought 32*l.* 10*s.* per ton, a considerable quantity upwards of 27*l.* per ton, and the average price 19*l.* 16*s.* 3*d.* per ton gross; but as the greater part of this ore was inferior to the bulk shipped last season, much better averages may be expected for the remainder, and that now on hand. Since the last meeting several trials have been made in smelting, with success, so far as the production of copper is concerned, but the expense of the process has been attended with greater cost than the cartage and freight on the ore. Under these circumstances the directors have determined to discontinue further operations in this department for the present; they have, however, to report that an offer has been made to smelt all the ores at about the Swansea charges, and the parties propose making a trial. Should their efforts be attended with success, the profit of the association will be considerably augmented. Within the last four months, the directors have declared and paid three dividends, amounting to 200 per cent. on the subscribed capital, but they do not contemplate the payment of a fourth until the 1st December next, and the amount will then be regulated by circumstances. The directors beg reference to the statement of accounts annexed. The first shows the first year's transactions, and it will there be found that the first 2959 tons of ore cost 5*l.* 4*s.* per ton, produced net 12*l.* 1*s.* per ton, and left a profit to the association of 6*l.* 17*s.* per ton. The cash balance-sheet of the association, from the 30th April, 1846, to the 30th September last. The sum of 12,676*l.* 18*s.* 1*d.* standing to the debit of the directors, as "sundry creditors," has been incurred in part payment of wages on the ore on hand, and cartage to the port. The value of the ore at the port, on the 30th September last, will, however, relieve this liability, and leave a balance in favour of the association. Part 3 contains an account of the liabilities and assets of the company to the 30th September last. The directors have hitherto refrained from making up an account of this nature, not having received sufficient information respecting the value of the ore on which they could safely rely. The present statement has been prepared with great care, and the directors are of opinion that the result will be realised; but as many of the items are merely estimated, and as a fall or advance in the price of copper would materially affect these calculations, the directors feel that they cannot pledge themselves to the actual fulfilment, but believe it to be as nearly correct as possible.

From the statement of accounts, it appeared that the ore raised during the year, from April 16, 1845, to April 30, 1846, was 2959 tons, and which realised 35,831*l.* 8*s.* 2*d.*; the expenses for raising which were 15,926*l.* 18*s.* 8*d.*—leaving a balance of profit of 19,904*l.* 9*s.* 6*d.*; from which deduct two dividends paid of 50 per cent., left balance of undivided profit 7534*l.* 9*s.* 6. The quantity of ore on hand on 31st March, 1847, was 3807 tons; there was raised from that time to September 30, 7264 tons, making to that day 11,071 tons, of which 3977 tons had been sold, leaving in stock 7092 tons. From the statement of assets and liabilities, it appeared the former were 135,786*l.*, and the latter 31,092*l.*—leaving balance in favour of the company of 104,694*l.*

BAROSSA RANGE MINING COMPANY.

Advices have been received by the directors of this company from their agent, Captain Rodda, dated 26th Oct. last; and it appears the tributers are raising good ores from the pitches, but sinking the shaft had been suspended for the time, owing to the non-arrival of funds, which had been forwarded from London, but had not reached the colony. Captain Rodda expresses his opinion, that a vast quantity of copper will be raised from the mines of the company, by a little further outlay, which, ere this, has probably been made. The water is so easy at Greenock Creek, that the shaft can be sunk to the 50 fathom level by the mere aid of water-barrels.

AUSTRALIAN MINING COMPANY.

A special general meeting of shareholders was held at the offices, London-bridge, on Monday last, the 17th inst.

JAMES HORNE, Esq., F.R.S., in the chair.

Mr. JOSEPH (the secretary) read the advertisement convening the meeting, and the minutes of the last meeting, which were confirmed; he also read the following

DIRECTORS' REPORT.

In accordance with the intimation made by your directors at the special general meeting, held on the 13th Dec. last, that they would, on receipt of Capt. Phillips's first report on the state of the company's mining operations in Australia, call a special general meeting of the shareholders, they have now the pleasure to inform you, that they have received letters from the committee of management in Adelaide, to the 16th of Nov. last, enclosing Capt. Phillips's first report on the state of the mines, of which the following is a copy:—

"*Adelaide, Nov.* 2.—In presenting you with this (my first) report of the mines, I beg to inform you, that I left the Reedy Creek Mine on Friday, the 29th Oct., and arrived at the Montacute Mine on the evening of the same day.

"*Reedy Creek Mine.*—The lode in the 30, north of Montefiore's cross-cut, is 2 ft. wide, composed of felspar, gossan, and stones of blue carbonate of copper. A winze, under the 30 fathom level, 10 fathoms south of the above, is sunk 1½ fathom. In the level the lode is worthless; but, the day before I left the mines, red oxide of copper was found. I inspected it again on the day I left, when the lode, for half the length of the winze, contained copper ore, worth 20*l.* per ton, and would produce two tons per fathom. Five fathoms south of that winze, in the 30 fathom level, there is ore ground, both in back and bottom, worth full 60*l.* per fathom, of the same sort as now found in the winze; it is, therefore, probable that the new discovery may be a combination of the ore in the level dipping northward. The lode in the 30 end, south of Montefiore's cross-cut, is 2½ feet wide, of gossan, iron, and spots of copper, and is very promising. In the southern winze, under the 20, the lode is 3½ feet wide, and will turn out half a ton of copper ore, at 16*l.* per ton. The south is a promising end—the lode is not all broken down; it is probably 3 feet wide, and will turn out a ton per fathom, at 16*l.* In the 20 north the lode is 2 feet wide, and contains spots of rich ores. Hitherto no ores have been raised on tribute, and I recommend the mines to be worked on the same plan, until more favourable circumstances may make it advisable to alter. Baker's lode is not likely to produce a large quantity of ore, above the 30 fathom level, so far as it has been explored. It will be proper to continue sinking the two winzes under the 30, and to commence a 40 fathom level also, from the foot of the hill, which, I hope, and have good reason to believe, will be a much better level than either of the present ones. There is a 40 fathom level driven in Anstey's lode, from the western side of the Creek, and a winze sunk 5 fathoms, which I could not examine, it being covered with water; but, judging from the heap at the level's mouth, and the lode in the back and bottom, there is little doubt that this also, as well as Baker's lode, will ultimately prove very productive. Hagen's lode is also a promising one, and will, as you perceive by the accompanying plan of working, as well as Anstey's, form a junction with Baker's lode, and from which uniting of lodes great deposits of copper are usually the result. This mine will not, however, I think, be very profitable, even without getting deeper than the 40 fathom level; as soon, therefore, as I can fix upon a proper spot, I shall recommend the erection of one, or both, of the horse pumping-engines sent from England by the *Rajah*.

"*Montacute Mine, Nov.* 2.—I am not yet in a proper position to give a particular description of this mine. I have been busily employed on Saturday and yesterday in dialling the workings (which is not yet finished), so as to get out a working plan; also, much rubbish remains to be cleared out before we can get in a proper working position. I am still, however, of opinion, as I stated verbally to the board, that 30 tons per month may be raised from this mine; and hope, by employing some of the men on tutwork, that more productive ground may soon be opened."

The following is another report of Captain Philips, dated 16th Nov., addressed by him to your late respected chairman, Samuel James Capper, Esq.:—

"*Montacute.*—Having so far cleared out the mine, as to be enabled to examine its various workings, we held a survey on the 4th of this month, when we set two pitches on tribute, at 5*s.* and 7*s.* 6*d.* in 20*s.*, and expected, on the following days, to set others, at tributes not exceeding 10*s.* in 20*s.* We have also employed five parties of men in driving ends and sinking winzes in the most promising parts of this mine. I find that little has ever been done here to give the lodes a fair trial. I have not yet completed the plan of the mine—after which, I shall be able to give a more minute description. At Reedy Creek we held a survey on the 5th Nov., when we set nine bargains on tutwork, on Baker's lode, at prices per fathom varying from 4*l.* to 8*l.* 10*s.* In the north winze, sinking under the 30, the lode improves in promise; it will now turn out 4 tons per fathom, at 18*l.* per ton (a sample produced 18½). The lode in the south winze will turn out 2 tons, at (say) 18*l.* per ton. We have commenced a 40 fathom level from the foot of the hill, but had not cut into the lode when I left. Four men are set to work on the Emery lode, and two dray loads had been sent off to Port Adelaide.

"*Wheal Rothschild.*—The survey on this mine was held on the 12th Nov.; we have commenced to sink two shafts on the main lode—six men being engaged in each, at 4*l.* and 3*l.* per fathom. In the northern shaft there is a fine gossan lode, in which we have sunk 8½ fathoms, by four men, in three weeks, in which we have found large lumps of grey and red oxide ore. I have a high opinion of the lode, and intend to sink as far as possible before the rain sets in. Nine men are employed in different places in searching for other lodes."

The following is an extract of a letter from the committee, dated 6th October:—

"Capt. Philips's opinion of the Tungkillo Mine is of the most favourable kind; he believes that Baker's lode is one of a substantially permanent character, and upon which the adventurers may entertain the strongest reliance. Of course, this is said subject to the casualties that mining is subject to; and I may here add, that this has always been the opinion of Jury, Cornelius, and Dennis—men, if not well known to the public, are still men whom their employers have accustomed themselves to consider deserving of all confidence—I mean, confidence in their opinion as well as their honesty. Partaking, as our committee do, strongly in these views, they have from time to time constantly felt persuaded that they would have the pleasure of making shipments of ore; but, up to the present time, they have not brought any down to the port—they are disappointed that the mine has not yielded ore earlier; but, although this is the case, they are in no ways less confident than they were. Be assured, so far as the opinion of man can go—it is only a question of time—you will before long have abundance of ore."

Your directors have also much satisfaction in laying before you extracts from letters received from the committee of management, by the same conveyance which brought the captain's reports, and which will tend to throw additional light upon the same, especially that portion which relates to the lease of their newly-acquired property—the Montacute Mine:—

"You will perceive, in our minutes of the 8th October, that Mr. Anstey and Mr. Montefiore were requested to visit the Montacute Mine, accompanied by Capt. Philips and Capt. Dennis, with a view to find occupation for a portion of the men arrived in the *Rajah*. In the minutes of the 7th inst., you will find that Capt. Philips reported to the committee, that, in his opinion, if a lease of this mine could be obtained at a dish of 1 in 10, it would be a good take; in consequence of which, a proposal was made to lease the property. This offer, you will observe by the minutes of the 12th inst., was declined by the proprietors of the mine; but, finally, on the 19th, an overture was made by them and accepted.—our committee only altering their original proposal, by consenting to lease it for three years, in place of holding the option of vacating if at the end of the first year. In this bargain our company have the benefit of the buildings upon the property; and, of course, of all the old workings, in the way of opening the mine—saving an outlay of not less than 1500*l.* The Montacute is a mine well known in this colony; and, in the ticketing papers, I believe, the ore invariably rules high, in proportion to their per centage, as compared to other ores; and the quantity raised from her, during between two and three years that she was at work, was very considerable. I think I may safely add, that there is all reason to suppose she may be equally good in future years; and, in that case, the lease will be good property to the company—but, on this head, I would rather you would trust to Capt. Philips's views, which you will shortly get; but, of course, to be of value, some little time must elapse before he will be prepared to speak with that degree of confidence which alone can satisfy the directors. Capt. Philips speaks very cautiously; but I know that his opinion is very decided that the Tungkillo Mine will, in depth, be a superb adventure, and the Montacute Mine a very good lease."

The emery lode, the discovery of which was announced in the second annual report, is likely to prove a source of emolument to the company, as will appear from the subjoined extract of a letter of the local committee. From 50 to 70 tons are expected to arrive, per *Rajah*:—

"The committee have read, with great interest and care, your letters about the emery, and they have compared the specimens sent from England with those they now have of their own; they note, that you are told that the specimen by the *Competitor* is not emery. Capt. Philips has reduced a stone of the Tungkillo emery to powder, and given it into the hands of a man of this town, who is a cutler and polisher, and he experimented with it in the presence of Mr. Hagen and Mr. Baker, both of whom were much satisfied with the effect which it produced. Pybus, the man alluded to, assured the members of the committee present, that it was fully equal for his purposes to emery which he got from England, and had used all his life. Capt. Philips is now at the Tungkillo Mine, and when he comes down he will, no doubt, be prepared with the fullest information upon the emery question."

Your directors have great pleasure in announcing, that the sub-captains and miners sent per *Rajah*, arrived out in perfect health—that they are all quietly at work on the various properties belonging to the company, under the direction of sub-Captains Paul and Morcom, and the general superintendence of Capt. Philips.

The wool season in Adelaide having then commenced, the board anticipate frequent communications by vessels, which will arrive direct.

The purchases of ore made by the committee of management in Adelaide, for the purpose of loading the three ships chartered by the company, are expected very shortly—advice having been received of their shipment; and your directors have reason to expect, will prove, on the whole, remunerative to the company.

Your directors have also great pleasure in announcing, that the question of the 2000 shares, allotted to the committee of management, and returned from the colony—the arrangement of which was left with them—has been satisfactorily adjusted; the deposit of 2*l.* per share, and the call of 10*l.* per share, having been duly paid thereon; and the shares taken up accordingly. The 500 shares allotted to Mr. J. B. Montefiore still remain unpaid; but the board anticipate that these will, upon their being returned from the colony, be placed in a similar position.

The appointment of a gentleman, competent to act as a resident superintendent of the company's mines and lands, has had the most careful consideration of your directors; they have, in the absence of more important advices from the mines, refrained hitherto from making a selection; but will, with the utmost regard to economy, and the qualifications requisite for the office, watch for the time when they shall receive such further advices from Adelaide as will, to the best of their judgment, warrant them in proceeding to such appointment.

The call of 10*s.* per share, made on the 15th January, has, notwithstanding the severe pressure of the times, without a single exception, been duly paid.

In conclusion, your directors have pleasure in stating, that the finances of the company are such as, they trust, will preclude the necessity of any further call being made on the shareholders during the present year; whilst, should the results of the working described by Capt. Philips realise his expectations, an early return on the capital of the company may be confidently anticipated.

The CHAIRMAN said, it was with much pleasure the directors laid this report before the meeting, it being the first time they had had an opportunity of reporting on the actual state of the mines, and their prospects. He thought they were fortunate in obtaining the services of Capt. Philips; he was spoken most highly of in Cornwall, not only for his geological attainments, but also for the highest integrity. They only now wanted time to develope the resources of the mines, and he saw no reason to doubt of their proving highly satisfactory. In reply to a proprietor, respecting the 2000 shares which had been reserved for, and sent to, the colony, but returned, the chairman said, they had been all taken up by the committee in Adelaide, and the calls paid upon them in full.

Mr. PENNY thought a more satisfactory answer ought to be given; he considered the directors in the colony were not in a position to pay, and, therefore, they must conclude that some one in London had paid for them. Supposing a sale was forced, and loss was the result, would the committee in Adelaide bear the loss?—The CHAIRMAN: The shares were duly allotted to the directors in Adelaide by power of attorney; and, as long as they were transferred, and paid upon, he could not see how they could go further into the matter. The committee in Adelaide were only delegates from the London board, and removable at any time.

Mr. PENNY considered that, to induce the committee to act heartily for the benefit of the company, they ought to hold an interest in the company.

The CHAIRMAN said, they did hold great interest; they had been presented with 200 shares each.

Mr. PENNY suggested, that in the event of any future vacancy at the board of directors in London, a preference should be given to such candidates as have the largest number of shares, and that the register be kept open for the inspection of the shareholders at all times. He inquired, if the question of royalty, as affecting the company's mines, had been settled? also, if the directors had succeeded in obtaining from Government the power to transfer to, and holding of shares in, the colony?

The CHAIRMAN explained that the register office at Somerset House was open daily—where the shareholders could obtain every information—and the question of royalty and transferring shares in the colony was still under negociation.

Mr. WOTTON wished to know if they had paid interest for the time the shares were in abeyance. With respect, also, to their larger territory, he thought there was great remissness somewhere. Capt. Philips ought to have inspected every bit of the land before this, by employing proper assistance; why, in a space of eight miles by four, there must be much where human foot had never trod. As to leasing Montacute, he thought three years very short; it was a time when a mine could only just be getting into proper working. As far as they had gone, they had absolutely yet done nothing; and he considered the undertaking a perfect failure.

The CHAIRMAN could not agree in the last observation; in leasing the Montacute Mine, they had only a royalty of one-tenth to pay on the ore returned; a great deal of expense had been incurred; much ore was in sight, and they might as well avail themselves of the profit which was to be made during the three years. With respect to the Tungkillo Mine, it should be remembered it was a new affair, and must have time for development; he believed the directors were justified in saying there was every prospect of success.

Mr. MASTERMAN, jun., said, perhaps it would be satisfactory to Mr. Wotton to learn, that their extensive territory had not been left uncared for. Capt. Philips had got a corps of engineers and surveyors, and they were carefully inspecting and costeaning every part of the property.

In answer to a question from Mr. Wotton, the CHAIRMAN said, the committee in Adelaide were not paid one single shilling.

It appeared, from a document read by the secretary, that 100 tons of emery stone were hourly expected, and the following copper ores would shortly arrive, part of which were the property of the company, per *John Bartlett*, 350 tons (100 tons of this consignment are from Montacute); per *Rajah*, 214 tons; per *Commodore*, 287 tons.

Mr. TRIPP, of Bristol, said, this was decidedly the best report they had yet received of their situation and prospects. He was happy to hear of the survey; and in a country such as Australia had proved to be, there was little doubt many discoveries would yet be made on their property. He should certainly (without dictating to the directors) recommend the appointment of a gentleman of talent and independence, to be sent over to inspect and report upon their property; he should not be connected with any other undertakings in the colony, and he believed his passage money and remuneration would be well and economically expended. At present, they could not depend on what they heard; many gentlemen had relatives in the colony, and reports of a contradictory nature were continually afloat.

The CHAIRMAN said, the distance and expense had hitherto deterred them from such an appointment, more particularly as Capt. Philips was so well able to conduct their affairs to the best advantage. When, however, they could see their way a little clearer, he thought such an appointment would be advantageous.—Mr. WILSON considered the report highly satisfactory, and the answers to every question given with candour. Whether the commissioners in Adelaide were properly constructed or not he could not say, but he would rather pay them than not. He moved the adoption of the report.

Mr. MOCATTA seconded the motion, which was carried unanimously.

It was ordered to be printed, and circulated among the shareholders.—In reply to a question from Mr. Wotton, the CHAIRMAN said, the committee were limited in their expenditure for land to 10,000*l.*—only 2000*l.* of which, as far as they knew, had yet been spent.—A vote of thanks was then passed to the chairman and directors, and the meeting broke up.

PRINCESS ROYAL MINES.—At a general meeting of shareholders, held on the 6th October, the second half-yearly report of the directors was read, from which may be gathered the following satisfactory particulars:—The amount of the land purchase, and preliminary expenses, provided out of the company's paid-up capital (14,800*l.*), was 13,574*l.* 12*s.* 6*d.* The working cost, management, and incidental expenses, have amounted to 3087*l.* 8*s.* 3*d.* These working disbursements have been met to the extent of 1971*l.* 5*s.* 8*d.*, by shipment of copper ore; and it is probable, that remittances to come, and the proceeds of ore not yet shipped, would not only balance the disbursement account rendered, but exhibit a surplus equal to 10 per cent. upon the capital employed. The quantity of ores shipped is about 193 tons, leaving at the port and at the mine about 113 tons. We consider these statements highly satisfactory; although, from all we can learn, the assured expectations of future and much more brilliant success are shadowed forth with extreme caution in the report before us. The following is the result of the annual election of directors:—G. F. Aston, Esq.; Hon. C. H. Ragot, M.L.C.; John Hart, Esq.; Josh. Johnson, Esq.; G. Morphett, Esq.; T. Shepherd, Esq.; and E. J. S. Trimmer, Esq.—*Adelaide Observer*, Oct. 23.

FOURDRINIER'S PATENT SAFETY APPARATUS, for PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS.

By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.:

1. From the men, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: in this case the apparatus is *self-acting*.
2. From either the men, or load, being drawn over the pulley: in this case, also, the apparatus is *self-acting*.
3. From the fearful consequences to men or load of a "whirl," or run: in this case the result is equally *certain*.

A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.

To inspect the apparatus, or to obtain any further information, application may be made to Mr. Edward N. Fourdrinier (the patentee), Cheddleton, near Leek, Staffordshire; or to Mr. Joseph Fourdrinier, 68, Arlington-street, Camden Town, London—who are prepared to GRANT LICENSES for the USE of the PATENT.

LAMBERT'S PATENT FLEXIBLE DIAPHRAGM WATER VALVES, or TAPS.

—A certain PREVENTATIVE of LEAKAGE, superseding the use of the metal plug-tap, which is so continually out of order. They are more durable, less expensive, and being nearly frictionless, are opened and closed with perfect ease. They have been tested under various pressures, and have given the greatest satisfaction.—MANUFACTURED ONLY by the Patentees,

THOMAS LAMBERT & SON, Brass and Cock Founders,

30, New-cut, Blackfriars-road.

BANGOR AND COYTMOR SLATE COMPANY, BANGOR, NORTH WALES.

Provisionally Registered under the Statute.

Capital £50,000, in 5000 shares, of £10 each.—Deposit £2 per share, on complete registration.

DIRECTORS.

GEORGE BURGE, Esq. | GEORGE CAPPER, Esq.
WILLIAM S. FOSTER, Esq. | JOHN YATES, Esq.

CONSULTING ENGINEER—John Taylor, jun., Esq., F.G.S.
BANKERS—London Joint-Stock Bank.
SOLICITORS—Messrs. Fyson, Curling, and Hope.
AUDITOR—Mr. J. E. Elsey.
SECRETARY—Mr. William Nicholson.

This company is formed for the purpose of working a portion, consisting of 52 acres, of the Great Bangor Slate Bed, situate about five miles from the port of Bangor, on the London and Holyhead road, and held under a lease, of which 21 years are unexpired.

The Coytmor estate adjoins the celebrated quarry belonging to Colonel the Hon. D. Pennant, which has been worked upwards of 70 years, and employs at the present time 2600 men, producing an estimated profit of upwards of £90,000 per annum.

On the same vein or bed, to the south-west, is the quarry of Thomas Assheton Smith, Esq., employing 1500 men, and yielding an estimated profit of £50,000 per annum. These quarries were commenced by an outlay of a few thousand pounds.

The vein or bed of the Coytmoor estate is the same, both in width and quality, as that of Colonel Pennant's and Mr. Assheton Smith's: this is shown by a small adjoining quarry, the Pantdraining, worked to the depth of 150 ft., within 20 yards of the boundary of this company's quarry, and by shafts sunk in various parts of the sett.

The Bangor and Coytmoor Quarry has not yet been worked, except upon trial, but a tunnel 9 ft. by 7 ft. has been driven from the turnpike road, 350 yards through the slate bed, to drain the quarry, and to take off the slate from the lower level, for which a tramway is already laid down. Six years have been occupied in driving the tunnel, which now renders the erection and cost of machinery unnecessary. The tunnel was constructed by the late Mr. Giles, C.E.

The apron, or top of the quarry, consisting of loam and broken slate rock, does not exceed 10 yards in thickness, which may be cleared off within three months, when an unlimited quantity of the best blue and purple slate may be quarried.

Quarrying is chiefly done by piecework. The wages paid at the adjoining quarries are under 30s. per thousand: the cartage to the port is 9s. per thousand, or 3s. per ton; the present price of slate, taking the average of Duchesses, Countesses, and Ladies, is about 85s. per thousand, leaving a gross profit, after the quarry has been well opened, of 50 per cent. on the labour expended, and a net profit of upwards of 30 per cent. The profit on the principal quarries along this great bed exceeds that amount.

Such is the repute, and so great is the demand for Bangor slate, that, on an average, throughout the year, from 50 to 60 vessels, of from 80 to 400 tons, lie at the port of Bangor waiting their turn for cargoes from Colonel Pennant's quarry alone.

During the late panic, when the price of almost every article of commerce was reduced 20 per cent., the list price of the principal slate quarries suffered no diminution.

A piece of freehold land, adjoining the Menai Strait at Bangor, has been purchased, on which a wharf, for shipping the slate, may be constructed at a moderate expense.

The capital of the company will be £50,000, but not more than £6 per share, or £30,000, will be called up within the first 12 months, which sum is deemed sufficient to cover the purchase money and all other outlays, and to put the quarries into full operation.

Applications for prospectuses, plans, and shares, to be made to Messrs. Foster, brothers, 25, Tokenhouse-yard; Mr. James Lane, 75, Old Broad-street, broker; or to Mr. Nichol son, at the office of the company, 57, Old Broad-street, London.

CORNWALL NEW MINING COMPANY.

Capital £100,000, divided into 20,000 shares, of £5 each.
(With power to be increased.)

To be incorporated, in pursuance of the statute of 7 and 8 Vic., cap. 110—by which the responsibility of each shareholder is limited.

Deposit 20s. per share.

Not to be Paid until the Company is completely Registered and Incorporated.

The CORNWALL NEW MINING COMPANY is ESTABLISHED to WORK a SERIES of TIN and COPPER MINES, chiefly in the district of ST. IVES, which has hitherto afforded a larger profit on its return of ore than any other part of the county.

In pursuance of this plan, five of this description have been already selected—viz.: Georgia Tin Mines, Trewortha Tin and Copper Mine, Bray Tin and Copper Mine, Trevarno Tin and Copper Mine, and Wheal Squire Tin and Copper Mine, with whose owners the committee have been enabled to make such advantageous arrangements, as to enable them to work one or more with even a small portion of the proposed capital.

These mines are not only known to contain mineral ores of immense value, but the workings are already so far advanced, that the lodes ascertained and reached must produce early and large returns; and, in addition to the above, there are others which the committee have secured on sufficient public support being obtained.

With a view of inducing the public generally to avail themselves of such a beneficial employment of their capital, the committee have made the shares £5, and of which only £2 10s. is to be paid within 18 months—limiting further calls to the control of the subscribers themselves, and to be made only when a dividend shall have been declared.

Applications for shares to be made, in the usual form, at the offices of the company, 47, Essex-street, Strand; and to the following brokers and agents, of whom detailed prospectuses may be obtained:—Messrs. G. and T. Irvine, Liverpool; Messrs. Cardwell and Sons, Manchester; Messrs. J. Scott and Son, Birmingham; Messrs. Rhodes and Hayes, Leeds; Messrs. Brady and Co., Hull; Mr. Joseph Clarke, jun., Southampton; Mr. Chas. Claye, Halifax; Messrs. William and Charles Skardon, Plymouth; Messrs. W. Moore and Co., Huddersfield; Mr. Thomas Dewhirst, Bradford; Mr. Henry Vatcher, Exeter; Mr. Ralph Dodsworth, York; Mr. W. F. Collier, Brixham; F. Crowe, Great Yarmouth; Mr. Charles Vincent, Dartmouth; Messrs. Edward Morgan and Co., Norwich; Messrs. Robinson Crusoe and Son, King's Lynn.—Prospectuses can also be had at the office of the *Mining Journal*, 26, Fleet-street, London. GEORGE LOCKWOOD, Secretary.

Office, 17, Essex-street, Strand.

ROYAL POLYTECHNIC INSTITUTION.—This establishment, after having been closed three months, was re-opened on Wednesday evening, with great *éclat*—the *private* view being attended by full 2000 persons; among whom we noticed several whose names in the scientific world, at once afford conclusive proof of the value attached to the institution, as the receptacle of works of art and science. Our notice must be necessarily brief this week, but we purpose noticing, in an early Number, the most prominent features, and the additional novelty to the well-selected series of models, and the course of lectures, with their valuable adjuncts by way of illustrations, for which this institution is so well reputed. A new theatre, or lecture-room, has been built, which will conveniently hold from 1000 to 1200 persons, and which was well filled on the occasion, the lectures delivered fully upholding the character which the abilities of Dr. Ryan and Dr. Bachoffner have secured to themselves and the institution. A splendid slab of native copper was placed in the vestibule, from Lake Superior; its weight is nearly 2 tons, and its dimensions are 3 ft. 6 in. by 2 ft. 6 in., and about 20 in. in depth. The entire of the establishment has been redecorated; and the works of art, furnished by Felix Sunmerly, and from the several establishments of Messrs. Copeland, Oslers, Jennens and Betteridge, Bielefeld, and others, are of a very attractive nature. Some paintings by Mr. Longbottom, the secretary in the cosmoramic department, were much admired, as also the decorations of Messrs. Lang, Williamhurst, and other artists. It is intended henceforth to have the institution open on Saturday evenings, which was not formerly the case. In the theatre or lecture-room there are "stalls," or subscription seats. This, we must say, we think is in bad taste; however, we doubt not, this will be altered. We shall take an early opportunity of again paying the institution a visit.

SANITARY IMPROVEMENTS.—Mr. Ashe, of Bristol, has recently patented an improvement of considerable importance, both as regards domestic arrangements and the larger question of sewers and drains. The invention (which has been highly approved of by Sir Henry de la Beche and other scientific gentlemen, and will, no doubt, attract the notice of the Metropolitan Commissioners,) is a cleansing machine, self-acting, comparatively inexpensive, and by no means likely to get out of order. The apparatus is so constructed as to catch and hold all available waste water, until it amounts to about fourteen gallons, when the collecting vessel being nearly full suddenly overbalances, and throws the water with fierce velocity into the conical basin, which conveys it into the ejoct, or soil-trap, and from thence, rushing through the house drain, or sewer, leaves all clean and free from every nuisance. The vessels, of course, can be so enlarged as to render the cleansing power sufficient for any size of drain or sewer. For domestic arrangements, the invention possesses properties which entitle it to the favourable consideration of those householders who are sufficiently alive to the close connection which exists between cleanliness and health.

NEW FACT IN TELEGRAPHING.—Last Monday, during the rain, the Troy and Montreal line worked successfully from Troy to Burlington, a distance of 186 miles, with a battery of ten cups, in which spring-water was substituted for sulphuric acid; and the battery had been at work with the water for ten or five days previous.—*New York Tribune*, April 3.

IRON, HARDWARE, AND METAL TRADES' PENSION SOCIETY.

—The FIFTH ANNIVERSARY FESTIVAL of this INSTITUTION will be held at the LONDON TAVERN, BISHOPSGATE-STREET, on WEDNESDAY, the 26th April, 1848—the Right Hon. the LORD MAYOR in the chair.

PRESIDENT.

WILLIAM THOMPSON, Esq., Alderman, M.P.

VICE-PRESIDENTS.

Thomas Badger, jun., Esq.	George Deane, Esq.	T. W. Kennard, Esq.
William Bagnall, Esq.	Samuel Ellis, Esq.	Thomas Langton, Esq.
William Barrows, Esq.	James Foster, Esq.	Crowley Millington, Esq.
Edward L. Betts, Esq.	John Gardner, Esq.	Richard Moser, Esq.
B. Botfield, Esq., F.R.S.	John Gibbons, Esq.	Robert Bulling, Esq.
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John Daniel, Esq.	Samuel Hawkins, Esq.	H. L. Taylor, Esq.
R. P. Davis, Esq.	R. W. Kennard, Esq.	H. J. Vardon, Esq.
		Philip Williams, Esq.

STEWARDS.

WILLIAM CUBITT, Esq., M.P. } Sheriffs of London and Middlesex.
CHARLES HILL, Esq. }

William Barrows, Esq.	B. Fowler, Esq.	George Oliver, Esq.
Joseph Beunitt, Esq.	David Gilmour, Esq.	S. M. Peto, Esq., M.P.
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T. R. Chidley, Esq.	Clement Heely, Esq.	C. J. Redpath, Esq.
John Chubb, Esq.	J. R. Holmer, Esq.	T. S. Richards, Esq.
Thomas Constable, Esq.	Richard Hurst, Esq.	B. Ridge, Esq.
John Dale, Esq.	V. Hurst, Esq.	George Scamell, Esq.
R. Dale, Esq.	J. E. Huxley, Esq.	William Shaw, Esq.
William Dickinson, Esq.	Charles Jack, Esq.	T. B. Simpson, Esq.
William Dray, Esq.	R. W. Kennard, Esql	William Smith, Esq., C.E.
Samuel Ellis, Esq.	T. W. Kennard, Esq.	William Swann, Esq.
Henry English, Esq.	Thomas Lee, Esq.	H. L. Taylor, Esq.
Jeremiah Evans, Esq.	William Massey, Esq.	F. A. Tiddeman, Esq.
A. H. Farwig, Esq.	William Malins, Esq.	Josh. G. Walker, Esq.
John Faulkner, Esq.	J. Martin, Esq.	Samuel Wells, Esq.

Tickets, One Guinea each, may be had of any of the stewards, and of the honorary secretary, Mr. T. Hawkins, 67, Upper Thames-street.

FOREIGN CATTLE AND PROVISION COMPANY.

REGISTERED PROVISIONALLY.

(Pursuant to the Acts of Parliament, 7 and 8 Vic., c. 110, and 10 and 11 Vic., c. 78.)

Intended capital £150,000 (with power to increase or diminish the same), in 15,000 shares, of £10 each.—Deposit 1s. per share.

No call will exceed 10s. per share, of which one month's notice will be given.

OFFICES—No. 3, LOTHBURY.

PROVISIONAL COMMITTEE.

Mr. SAMUEL WOOLSEY, merchant, Norwich.
Mr. JOHN KEABLE, jun., Great Yarmouth.
WILLIAM HENRY CALEY, Esq., Cambridge-terrace, Regent's-park.
Mr. ADAM CLARK, salesman, Dumfries and Norwich.
Mr. MARK REDGRAVE, 20, Moorgate-street.
Mr. EMANUEL H. VAN STRAATER, Rotterdam.
Mr. JOHN PITTARD, provision merchant, Cotton's Wharf, Tooley-street.
Captain JAMES TOMLIN, 72, Cornhill.
Captain J. P. CHATTEN, 264, High-street, Wapping.
Mr. STEPHEN FROMOW, salesman, Norwich.
Mr. DAVID GORDON M'QUHAE, salesman, Norwich.
Mr. B. J. CHAPMAN, 4, St. James'-road, Old Kent-road.
Mr. SAMUEL THURNELL, Ada-street, Cambridge-heath.
Mr. WILLIAM TREMAINE, 33, Prescott-street, Goodman's-fields.
Mr. AUGUSTUS CROOK, Bungay, Suffolk.
Mr. JOHN LEWIS, 41, Beech-street, Barbican.
Mr. J. VAN RAALTE, Great Yarmouth.
Mr. G. E. PARISH, 15, Crammer-place, Waterloo-bridge.
Mr. J. E. LAWS, Great Yarmouth.
(With power to add to their number.)

SOLICITORS.

T. D. Keighley, Esq., 73, Basinghall-street; Messrs. Reynolds & Palmer, Gt. Yarmouth.

BANKERS.

Messrs. Barclay, Bevan, Tritton, & Co., Lombard-street; Messrs. Gurneys and Birkbeck, Norwich; Messrs. Gurneys, Turner, and Brightwen, Great Yarmouth; Messrs. Moses, Ezekiel, and Co., Rotterdam.

LONDON AND FOREIGN AGENTS.

London—A. Spielmann, Esq., Lombard-st.
Rotterdam & Dordrecht—J. H. Van Straater.
Amsterdam—E. S. Van Beuseknm.
Hanover—Jacob Thorner.
Havre-de-Grace—Henry Manaina
Honfleur—Mons. Magliore Aubert.
Rouen—Alexander Ault, Brothers.
Corunna and Vigo—Messrs. Ortega and Co.
Bilboa—Mr. Joseph Taylor.
Elsinore—Messrs. Severin, Hiesen, and Co.

SECRETARY—James Dove, Esq.

This company is projected for the purpose of organising a system, upon which the importation of cattle and provisions from the continent of Europe, or elsewhere, may be carried on more extensively and economically than it can be by individual speculation. The business of the company will be primarily that of importing cattle, sheep, and provisions from Holland, Denmark, Germany, Spain, Portugal, Scotland, and any other country which presents a favourable market; and attention will also be directed to the purchase of cured and prepared provisions, and dairy, farm-yard, and orchard produce, when it can be imported with advantage.

The importation of foreign cattle for consumption into this country is still in its infancy; but the rapid progress which it has already made, gives ample assurance, not only of the great profit attending it, but of the existence at once of a demand and supply sufficient to afford active and lucrative employment for the resources of a public company.

The following returns are extracted from the official reports of the Board of Trade made up to the 5th of January, 1848:—

A Return of Live Animals Imported in the years 1845, 1846, and 1847.

	1845.	1846.	1847.
Oxen and bulls ..... *Nos.*	9,743	17,191	27,811
Cows	6,503	25,349	35,138
Calves	587	2,503	12,389
Sheep	15,845	91,732	136,527
Lambs	112	2,892	3,349
Swine and hogs	1,590	3,856	1,242
Total of all kinds	34,380	143,523	216,456

Showing an increase of more than 400 per cent. in 1846 over 1845, and of more than 600 per cent. in 1847.

A Return of Provisions Imported in the years 1845, 1846, and 1847.

	1845.	1846.	1847.
Bacon ..... *Cwts.*	53	2,960	87,067
Beef, salted	84,542	175,051	112,590
Beef, fresh	3,272	2,121	5,011
Hams	5,426	11,242	18,264
Meat, not otherwise described	435	1,118	3,114
Pork, salted	39,540	72,656	235,313
Pork, fresh	133	133	101
Total of all sorts	133,401	265,281	461,460

Showing an increase of about 100 per cent. in 1846 over 1845, and of near 400 per cent. in 1847.

The above returns exhibit a trade in which the transactions appear (from a moderate calculation), to have amounted during the last year to more than *a million and a half* sterling, and to have increased in value fivefold in the short space of two years. These results too have obtained by the feeble agency and operations of individual enterprise alone; and if these have been profitable, how much more so would be the organised operations of a public company in the same field?

The advantage which this company possesses will not consist solely in the greater extent of their resources, and the more perfect agency under their direction, but also in the economy with which their capital will be employed. By proper arrangements with respectable houses abroad, they will be able, with a comparatively limited capital, to carry on a very extensive scale of importations from all the productive sources of supply.

The committee have the gratification of announcing that they have secured most eligible water-side premises; and that parties of high character and long standing abroad are prepared to enter into the necessary arrangements with the company, and to co-operate with it in realising its anticipations of success, in which they warmly concur.

In addition, the committee would advert to the great facilities which the progress of steam navigation and railway traffic has at length afforded for the vigorous and successful conduct of that branch of international trade which this company will carry on. A constant and expeditious intercourse is now kept up by steam navigation, between the ports of London, Yarmouth, Harwich, Lowestoft, Great Grimsby, and Hull, on this side, and the principal ports of the continent on the other; and from the latter, railways are diverging in every direction into the interior of the continent, through the rich grazing districts of Holland, Hanover, Prussia, Holstein, and other States of Germany, from which large supplies of cattle and provisions can thus, at all times, be procured.

As an Act of Parliament will not be required for the incorporation of the company, the expenses incurred in its formation will not be considerable; and the interests of the shareholders will be secured by a Deed of Settlement, prepared by counsel, until which time all contracts as to shares will be entered into by and with the secretary only, as a trustee for the company.

The company will commence operations as soon as a competent number of shares are taken, and a sufficient amount paid up to render it expedient. The committee have power to increase or diminish the capital, and to reserve a portion of shares for allotment at a future period, if deemed advisable.

Applications for shares in the annexed form to be sent to the secretary, at the offices of the company, No. 3, Lothbury, where prospectuses may be obtained. Also, at the offices of the solicitors to the company: Adam Spielmann, Esq., Lombard-street; the Bull Inn, Market-place, the Bell Inn, and the Cattle-market Inn, Norwich; Mr. Laws, the Quay, Mr. Costerton, Regent-street, and at the Bear and Angel Inns, Great Yarmouth; Mr. Cavell, Deal; Mr. Burrell, Hastings; Mr. Freeman, Market-place, Northampton; Messrs. R. Cruso and Son, Lynn; Thomas Tootal, Esq., Manchester; Messrs. Redsdale, Myers, and Bailey, Leeds; and at Messrs. John Wills and Co., Liverpool.

FORM OF APPLICATION FOR SHARES.

FOREIGN CATTLE AND PROVISION COMPANY.—(PROVISIONALLY REGISTERED.)

Intended capital, £150,000 (with power to increase or diminish the same), in 15,000 shares of £10 each.—Deposit, One Shilling per share.

To JAMES DOVE, Esq., *Secretary of the Foreign Cattle and Provision Company.*

I request you will allot me shares in the above company; which I agree to accept, or any less number you may allot to me; and to pay, when required, the deposit of 1s. per share to the company's bankers, and to execute the Deed of Settlement, upon receipt of notice from you that the same is ready for execution.

Dated this day of , 1848.

Name in full .....
Profession or business .....
Residence in full .....
Name of referee .....
His residence and occupation .....

In the press, to consist of Two Parts, price 14s., Part I., of a

TREATISE UPON THE WINNING AND WORKING OF COAL MINES

—containing the principles of BORING, SINKING, and the DIFFERENT MODES OF WORKING, with numerous MINING STATISTICS. The whole illustrated with plans and engravings.

By MATTHIAS DUNN, Mining Engineer, Newcastle-upon-Tyne,
Author of *Historical Account of the Coal Trade, &c.*

Subscribers' names will be received by the author; by Mr. Christie and Mr. Ross, printers, Newcastle; by Simpkin and Marshall, booksellers, London; and at the office of the *Mining Journal*, 26, Fleet-street, London.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular

MONTHLY MAIL (steam conveyance for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th; and from Suez on or about the 10th of every month.

For rates of passage-money, plans of the steamers, and to secure passages, apply at the company's offices, No. 122, Leadenhall-street, London.

CALEDONIAN RAILWAY COMPANY—LOANS ON DEBENTURES.

—TENDERS of LOANS ON DEBENTURE BONDS are now RECEIVED in sums of not less than £500, for any number of years not exceeding five. Interest to be at the rate of 5 per cent. per annum, payable half-yearly, in London, Edinburgh, Glasgow, or in any country bank.

Tenders to be addressed to this office, giving full name and address of lender.—Parties may also communicate with Messrs. Foster and Braithwaite, 68, Old Broad-street, London.

By order. D. RANKINE, Treasurer.

Caledonian Railway Office, Edinburgh, Feb. 25, 1848.

PATENT GALVANISED IRON AND WIRE ROPE WORKS, *MILLWALL, POPLAR.*

ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD of GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £20, under the ordinary processes. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

PATENT ALKALI COMPANY'S IRON PAINT.—This

PAINT, now first offered to the public, is the PRODUCT of a PATENT PROCESS, and possesses VALUABLE and PECULIAR QUALITIES, not otherwise attainable. Its colour is a purple-brown—it is perfectly innocuous—is far more durable than lead paint, and two coats are fully equal to three of any other paint. A single coat will be sufficient to demonstrate this. It dries rapidly, and its durability is very great.

From its chemical composition, it is especially, and above all other paints, adapted for covering iron; also wood, and stuccoed, or brick walls. The peculiar oxidation of the base of this paint makes it impossible that further change should take place in its composition. Its identity with iron secures it from galvanic action, so injurious to the durability of lead paints on iron work. It has been exposed on shipping to the action of seawater, and the sulphuretted hydrogen, so prevalent in sea-ports and tidal harbours, for three years, without change.

Its *cheapness* and *strength* render it admirably adapted for iron railings, farm buildings, and shipping. It will also cover creosoted timber. Price, by the ton, £20, delivered in London. All orders to be addressed to the offices of the company, 20, Fenchurch-street, London; where testimonials may be seen as to the value of the paint.

EVANS, BROTHERS, Agents.

PATENT FLEXIBLE INDIA-RUBBER PIPES AND TUBING,

for Railway Companies, Brewers, Distillers, Fire-Engines, Gas Companies, Gardening and Agricultural purposes, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE-PIPES are made to stand *hot liquor* and *acids*, without injury—do not become *hard* or *stiff* in any temperature (but are always perfectly flexible); and as they require NO APPLICATION of oil or dressing, are particularly well adapted for *Fire Engines, Pumps, Gas, Beer-Engines, Gardens*, and all purposes where a *perfectly Flexible Pipe* is required.

Made all sizes, from ¼-inch bore upwards, and of any length to order.

Vulcanised India Rubber Garden Hose, fitted with brass-taps, Copper branch and Rose's complete, ready to be attached to pumps, water-butts, or cisterns.

Sole manufacturer, JAMES LYNE HANCOCK,
Goswell Mews, Goswell-road, London.

N.B.—Vulcanised India-Rubber Washers, of all sizes, for joints of hot-water and steam-pipes, and *Vulcanised Sheet Rubber*, any thickness, for all kinds of joints, and other purposes.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.

—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.

DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

THE PATENT OFFICE AND DESIGNS REGISTRY, *No. 210, STRAND, LONDON.*

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street)

LONDON AND PROVINCIAL DETECTIVE ASSOCIATION, FOR THE PROTECTION OF TRADE.

No. 39, SOUTHAMPTON-BUILDINGS, HOLBORN, LONDON.

OFFICE HOURS: TEN TO FOUR.

The object of this institution is to furnish every information (which may be obtained by subscribers only) respecting all parties, in any capacity whatever, avoiding their creditors, under any circumstances; also, in providing every species of information calculated to protect Bankers, Merchants, Tradesmen, Companies, Institutions, Assurance Offices, Loan Societies, Auctioneers, Landlords, Tenants, &c., in such a manner hitherto unattempted by any kindred society.

Subscribers may be preserved from losses through fraud of all kinds, by previous application at this office. They are also requested to make every communication in their power that may tend to protect the members, which will be considered strictly private, and, at the same time, deemed a favour.

Persons wishing to become members of this association, must apply, by letter only, addressed (pre-paid) to the secretary, who will forward the rules.

Subscribers only are eligible to apply for any information—the terms of which are £1 1s. per annum—10s. 6d. in advance. H. E. NEWMAN, Secretary.

PROFESSIONAL LIFE ASSURANCE COMPANY,

Connecting the Clerical, Legal, Military, Naval, and Medical professions, and holding out advantages to the public not hitherto offered by any similar institution.

Incorporated. Capital £250,000.

Established upon the mixed, mutual, and proprietary principle.

Rates essentially moderate.—Every description of policy granted. Immediate, survivorship, and deferred annuities; and endowments to widows, children, and others.—Every policy (except only in cases of personation), indisputable.—The assured permitted to go to and reside in Canada, Nova Scotia, New Brunswick, Australasia, Madeira, Cape of Good Hope, and Prince Edward's Island, without additional premium.—Medical men remunerated for their reports.—Loans granted on real or personal security.—One-tenth of the entire profits appropriated for the relief of the assured while living, and of his widow and orphans.—Annuities granted in the event of blindness, insanity, paralysis, accidents, and any other bodily or mental affliction, disabling the parties. Persons of every class and degree admitted to all the advantages of the corporation.—Rates for assuring £100 at the age of 25, 35, 45, and 55, respectively—namely, £1 14s. 6d., £2 5s. 6d., £3 4s. 3d., and £4 18s. 6d.

Prospectuses, with full details, may be had at the office.—Applications requested from parties desirous of becoming agents. EDWARD BAYLIS, Actuary and Secretary.

Offices, 76, Cheapside, London.

NATIONAL LOAN FUND LIFE ASSURANCE SOCIETY, *26, CORNHILL, LONDON.*

Capital £500,000.—Empowered by Act of Parliament.

This institution embraces important and substantial advantages with respect to Life Assurances and Deferred Annuities. The assured has, on all occasions, the power to borrow, without expense or forfeiture of the policy, two-thirds of the premiums paid (see table); also the option of selecting benefits, and the conversion of his interests to meet other conveniences or necessity.

Assurances for terms of years are granted on the lowest possible rates.

DIVISION OF PROFITS.

The remarkable success and increasing prosperity of the society has enabled the directors, at the last annual investigation, to declare a fourth bonus, varying from 35 to 95 per cent. on the premiums paid on each policy effected on the profit scale.

EXAMPLES.

Age.	Sum.	Prem.	Year.	Bonus added.	Bonus in Cash.	Permanent reduction of Premium.	Assured may Borrow.
60	£1000	£0 3 4	1837	£217 15 1	£109 0 11	£16 0 4	£445 0 0
			1838	192 3 0	87 1 4	13 10 2	395 11 1
			1839	165 11 10	74 1 9	11 3 1	346 2 3
			1840	116 7 6	54 0 10	7 18 10	296 13 4
			1841	111 6 8	49 10 0	7 10 4	247 4 4

The division of profits is annual, and the next will be made in December of the present year. F. FERGUSON CAMROUX, Secretary.

London:—Printed and Published, weekly, by HENRY ENGLISH, at the Office, No. 26, FLEET-STREET, in the city of London, where all Communications and Advertisements are requested to be forwarded—addressed to "the Editor"—post-paid. *April* 22, 1848.

*** It will at all times save much delay and inconvenience, if communications are directed simply To THE EDITOR, *Mining Journal Office*, 26, FLEET-STREET, LONDON.

And POST-OFFICE ORDERS, &c., must be made payable to WILLIAM SALMON MARSELL, as acting for the proprietors.